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ABSTRACT

This study examined several aspects of language development in young children. Base line data was gathered from Southern urban higher status white and lower status white and black 4-year-olds on measures of: (1) proficiency in certain aspects of standard American English, (2) use of attributes in description, and (3) ability to imitate, comprehend, and produce selected grammatical structures. A total of 147 children attending preschool classes were pre- and posttested on the Day Language Screen and the Brown, Fraser, Bellugi Test of Grammatical Contrasts. Data were also collected concerning the language program in each of the classrooms and the demography of the subjects. The results indicate that there are status-race differences in the development of language skills in 4-year-olds, with the higher status white group scoring significantly higher in all three categories on the pre- and posttests. However, the two lower status groups had significantly greater gain scores, indicating that the remedial language program used in their classes improved their proficiency in standard American English and raised their level of language maturity. It is suggested that direct instruction in language skills be given to the lower status preschool child, in an effort to avoid later reading difficulty. (Author/NH)

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# Development of Grammatical Structures and Attributes in Pre-School Age Children

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January, 1970

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J.R.M.
D.E.D.

## SUMMARY

This study examined several aspects of language development in young children. The purpose of the study was to gather base line data from Southern urban higher status white and lower status white and black four year old boys and girls on measures of their:

(1) Proficiency in certain aspects of standard American English,

(2) Use of attributes in description, and

(3) Ability to imitate, comprehend, and produce selected grammatical structures.

The sample consisted of 147 children (50 higher status white, 40 lower status white, and 57 lower status black) who were attending public school pre-kindergarten or private nursery schools. They were administered the Day Language Screen in the fall and spring of the school year as pre- and post-measures. Part I of the Language Screen measures the child's proficiency in selected aspects of receptive and expressive language skills. Part II of the screen assesses the child's proficiency in the use of attributes in describing objects. The attributes were scored using a modification of Sigel's system for describing children's grouping preference behavior. In the winter of the school year the children were given the Brown, Fraser, Bellugi Test of Grammatical Contrasts which tests their ability to imitate, comprehend, and produce 12 grammatical contrasts. Data concerning the language program in each of the classrooms and demographic data on each subject were also collected.

The Language Screen data were analyzed by analysis of variance and planned comparisons among the means. Significant effects due to status-race were found for the pre-test, post-test, and gain scores. The higher status white group scored significantly higher on the pre- and post-tests, but the two lower status groups obtained significantly greater gain scores.

Kruskal-Wallis analyses and Mann-Whitney U Tests were performed to determine the effects of status-race upon the six categories of attributes: contextual-relational (functions), descriptive-part whole (nouns alone, adjectives alone, modifiers with nouns and verbs), conceptual, and total attributes. The higher status white group used significantly more modifiers on the pre- and post-tests, and more total attributes on the pre-test. However, the lower status black group used significantly more nouns alone and total attributes on the post-test and gained significantly more in the use of nouns alone, adjectives alone and total attributes.

The Brown, Fraser, Bellugi Test scores were analyzed by analysis of variance and planned comparisons between group means. Significant effects due to status-race were obtained for all three tasks--imitation, comprehension, and production. The higher status white group performed significantly better on all three tasks than did either of the lower status groups. The lower status black group performed significantly

better than the lower status white group on the imitation task. However, the lower status white group scored significantly higher than the lower status black group on the comprehension task.

*t*-tests between task means revealed that the production task was the most difficult for all of the groups. There was no difference between the imitation and comprehension tasks for any of the groups except the lower status white group. These children performed significantly better on the comprehension task than on the imitation tack.

The language program in the lower status white and black children's classes was designed to improve their proficiency in standard American English and to raise their level of language maturity. The children's significant gains on both Parts I and II of the Language Screen indicate that this program was at least partially successful. The lower status white children did not improve as much on the language measures as did the lower status black children.

Several additional analyses were performed on the Brown, Fraser, Bellugi Test data. An alternate scoring system was devised to account for possible dialect differences between the test and the lower status children. Both groups' production scores improved significantly with this system and the lower status black group's imitation scores also improved significantly. It is possible that the scoring modifications were more appropriate for the lower status black children's dialect than for the lower status white children's dialect.

An analysis of the percentage of correct responses for each grammatical contrast revealed that the three status-race groups found the same contrasts to be either quite difficult or quite easy.

The results of this study of language development indicate that there are status-race differences in four year old's language skills. Differences between higher and lower status children on measures of Standard American English, language maturity, and ability to imitate, comprehend and produce selected grammatical contrasts have been demonstrated. Pre-school programs need to address themselves to these differences in order to prepare the children for later success in school. This study also has revealed that the differences between higher and lower status children's use of language can be decreased by language instruction.

## INTRODUCTION

The inter-relationship between the language development of children and success in school and the wide variations in level of language maturity when children enter school are familiar to most educators (Loban, 1963). Several researchers have investigated the acquisition of language in young children (Strickland, 1969). Much is currently being written concerning the level of language proficiency of lower status children and its limiting effect on their success in school (Cazden, 1966). Little is known, however, of the differences in acquisition of grammatical structures in higher and lower status children.

### Related Literature

Social Status and Language Development. That lower status children have a smaller vocabulary, use sentences of shorter length, and do less well in tasks of verbal comprehension than higher status children has been clearly documented (John, 1965). There appears to be a relationship between quantitive measures of language development and verbal measures of cognitive functioning, but a causal relationship has yet to be documented. As important as studies of the amount of language production have been, data are needed about the degree to which there are qualitative differences in the language of higher and lower status children (Brown, 1958; John, 1964; Labov, 1967).

Language Development, Cognition, and Social Status. Sigel (1967) has studied the effects of status on children's grouping preference behavior. He identified three major styles: (a) contextual-relational, (b) descriptive-part whole, and (c) conceptual, for use in ordering the ways by which young children organize phenomena. Sigel's work has been primarily concerned with receptive language; he has asked children to make groupings of objects or pictures of objects. Higher status children used descriptive-part whole and conceptual styles most frequently, while lower status children were more likely to use a contextual-relational style. Sigel's work may be interpreted as evidence of a difference in intellectual maturity between children who otherwise are differentiated by status only. That this reflects a difference in language maturity must remain a deduction. It seems valuable to use Sigel's schema for analyzing grouping preferences across status lines on tasks requiring expressive language to identify differences in language use and inferred cognitive development.

As young children's language develops, one might ask whether it is necessary for them to comprehend a given syntactic structure before they can produce it. To answer this question, Fraser, Bellugi, and Brown (1963) studied the relative difficulty of three tasks: imitation, comprehension, and production. They had a sample of 12 three year old children in a suburban Northeast community imitate 10 different grammatical structures. The children's proficiency in comprehending and producing these same 10 structures was also assessed. The tasks ordered in difficulty from easiest to hardest as follows: imitation, comprehension, production. Because imitation preceded comprehension for

these children, Fraser, et al. conclude that imitation is an expressive skill separate from comprehension. This suggests that comprehension and production are cognitive tasks which require an understanding of meaning or reference in the language. A question to be tested in this study is whether this sequence in the control of grammar occurs for higher and lower status children in a large Southern city.

The theory that language skills develop in a prescribed sequence supports the hypothesis that the sequence will be the same for all children. However, the data related to the effects of environmental stimulation (or lack of it) upon language development indicate that the language of children from lower status homes will be less developed than that of children from higher status homes.

These two positions suggest that the sequence of mastery of imitation, comprehension, and production of grammatical structures, as well as the use of attributes, may be the same for all children. However, the age at which each task is mastered will be influenced by environment.

## Statement of Problem

The purpose of this study was to gather base line data from Southern urban higher status white and lower status white and black four-year old boys and girls on measures of their:

(1) Proficiency in certain aspects of standard American English,

(2) Use of attributes in description, and

(3) Ability to imitate, comprehend, and produce selected grammatical structures.

## Hypotheses

The following hypotheses were tested:

(1) The higher status white children will be more proficient in expressive and receptive use of certain aspects of standard American English than will the lower status white or black children.

(2) The higher status white children will be more likely to describe objects using a conceptual or descriptive-part whole style than will the lower status white or black children.

(3) The higher status white children will be more likely to comprehend or produce the grammatical structures than will the lower status white or black children.

## METHOD

### Subjects

The subjects were four year old Southern urban children enrolled in a pre-kindergarten or nursery school program. Only children who will be eligible to attend first grade in September, 1970 were included. They represented higher and lower status groups, defined by parental occupation. Warner's scale for ordering occupations of heads of households was modified as follows:

1. Professional, sales, supervision, business administration = 1 point
2. Second level management, public school teaching = 2 points
3. Skilled industrial or building trades worker, truck or bus driver, enlisted military = 3 points
4. Unskilled business or industrial worker, day laborers, public sanitation employee = 4 points
5. Unemployed, relief, imprisoned = 5 points

Subjects scoring two or less were judged higher status; scores of three or more were called lower status. All subjects included in the study were selected according to these criteria.

Three groups of children were tested beginning in the fall of 1968. One group consisted of lower status black children, one of lower status white children, and the third of higher status white children. The lower status black and white children were selected from children enrolled in nine of the pre-kindergarten classes in the Atlanta Public Schools. These classes are located in schools in which a high percentage of the families have incomes below $2000 per year. The higher status white children were selected from those enrolled in four classes in private nursery schools. All schools had five-day per week programs.

The original sample contained 188 children; 59 higher status white, 55 lower status white, and 74 lower status black. Seven children attending the public school pre-kindergarten classes had to be dropped from the sample because they did not meet the above criteria for lower status. Twenty-six children moved during the school year, (four higher status white, twelve lower status white, and ten lower status black); eight children were dropped for other reasons (bilingual home, excessive absences, or failure to meet chronological age requirements.) Table 1 gives the distribution of the final sample of 147 children by status-race and sex.

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Table 1

Distribution of Final Sample by Status-Race and Sex

| Status-Race | Boys | Girls | Total |
|---|---|---|---|
| Higher status white | 32 | 18 | 50 |
| Lower status white | 21 | 19 | 40 |
| Lower status black | 30 | 27 | 57 |
| Total | 83 | 64 | 147 |

## Instruments

Two instruments were used in this study: the Day Language Screen and the Brown, Fraser, Bellugi Test of Grammatical Contrasts. Both instruments were administered individually by trained examiners.

Day Language Screen. The Language Screen consists of two parts, one of which assesses proficiency in receptive and expressive aspects of Standard American English grammar. It includes items in which the child is required to use complete sentences, identity statements, singular/plural and negative forms, prepositions, polar opposites, and classifications in both receptive and expressive forms. This part of the screen consists of 46 items scored correct/incorrect. The examiner records the child's responses on a separate answer sheet. The total score is obtained by adding all of the correct answers (maximum score = 46).

The second part of the Language Screen measures the child's ability to use attributes in describing various objects. His responses are recorded verbatim and are scored using a modification of Sigel's system for describing children's grouping preference behavior (1967). Words and phrases used to describe the objects are ordered in one of three major groups: (1) contextual-relational (functional), (2) descriptive-part whole, and (3) conceptual. Prior use of this system has indicated that descriptive-part whole should be sub-divided into three groups: nouns alone, adjectives alone and nouns or verbs with modifiers (Day, 1967). Describing any object on the basis of its characteristics is different from describing it by function or classification. In addition, to say a turtle has legs is not the same as saying the turtle has four legs. To provide greater specificity in analyzing the nature of descriptive-part whole responses the sub-categories nouns alone, adjectives alone, and nouns or verbs with modifiers were created.

The child's score is obtained by counting the number of acceptable attributes given. Scores are obtained for the total number of attributes and for the number within each of the five response categories.

Appendix A contains a copy of the Language Screen, the answer sheets, and the criteria for scoring both parts.

Brown, Fraser, Bellugi Test of Grammatical Contrasts. This instrument measures the children's ability to comprehend, imitate, and produce certain grammatical structures. Each of the 12 grammatical contrasts is measured by two pairs of sentences in both of the equivalent forms of the test (Maximum possible score = 48). Accompanying each pair of sentences is a pair of pictures, one illustrating the first sentence and the other the second. The 12 pairs of grammatical contrasts used in each form are:

1. Mass noun/Count noun

2. Singular verb/Plural verb (present indicative tense)

3. Singular verb/Plural verb (is/are)

4. Present progressive tense/Past tense

5. Present progressive tense/Future tense

6. Affirmative sentence/Negative sentence

7. Subject/Object (passive voice)

8. Indirect object/Direct object

9. Singular pronoun/Plural pronoun (third person possessive)

10. Subject/Object (active voice)

11. Adjective in two positions

12. Preposition

For the comprehension task, the subject is shown the two pictures accompanying each sentence. The examiner says one sentence and the subject points to the picture named. For example, for the mass noun/count noun contrast, the examiner shows the child a picture of a plate of fried chicken and a picture of a live chicken. He says one of the structures, "A chicken," and the child is expected to point to the correct picture. Then he says, "Some chicken," and asks the child to point to that picture.

For the imitation task, the examiner says one of the structures, "Some chicken," and asks the child to repeat it. Then he says the other structure, "A chicken," and asks the child to repeat it.

For the production task, the examiner "names" the two pictures by saying the structures accompanying them. Then he asks the child to "name" first one of the pictures and then the other.

All the items are scored correct/incorrect using a modification of the scoring procedure reported by Fraser, et al (1963). Each subject is given two practice items prior to each task. Form A of the test was used for the imitation task for all subjects. One-half of the subjects were given Form A for the comprehension task and Form B for the production task, and the other half Form B for comprehension and Form A for production. The three tasks were presented in each of the six possible orders, one to every sixth subject.

Appendix B contains a copy of Forms A and B of the test, directions for administering it, a sample response recording sheet, and the criteria used for scoring each task. Fraser, et al (1963) give no reliability or validity data. They do indicate 99% agreement among scorers, no significant differences between Forms A and B, no significant order effect among the three tasks, and answers well above the chance level of performance.

Procedure

All subjects were tested individually in a separate small room near their classroom. If possible, a small table and two chairs were used.

Approximately 15 minutes were required to administer each test. The two examiners visited in each classroom prior to beginning testing so that the children might become acquainted with them. The Day Language Screen pre-test was given during a two and one-half month period in the fall of 1968. The 13 classes were tested in random order with both examiners testing in each class. The Language Screen post-test was given during a two month period in the spring of 1969. The same testing procedures as in the pre-test and the same order for testing the 13 classes were used. Approximately five months intervened between the administration of the pre- and post-tests.

The Brown, Fraser, Bellugi Test of Grammatical Contrasts was administered by the same examiners under the same conditions as the Language Screen. It was given during a two month period in the winter of 1969. The classes were tested in the same order as they were tested with the Language Screen.

The remaining time during the winter of 1969 was used to obtain demographic data for each subject and to observe the language instruction periods in each classroom. Appendix C gives the demographic data sheet completed for each subject and Appendix D gives the observation schedule used for the language observations.

Data Analysis

The data from Part I of the Day Language Screen were analyzed by computing two-way analyses of variance (sex by status-race) for the pre-test, post-test, and gain scores. Planned comparisons were made among the means where significant effects were obtained.

The data from Part II of the Language Screen (attributes) were analyzed by a series of Kruskal-Wallis tests, assessing the effects of status-race upon the pre-test, post-test, and gain scores in the six categories of attributes (contextual-relational; descriptive-part whole--nouns alone, adjectives alone, and nouns or verbs with modifiers; conceptual; and total). Mann-Whitney U tests were performed on pairs of individual means. The gain scores on both parts of the Language Screen were tested using a *t*-test to determine whether or not significant gains had been made by the children.

Three one-way analyses of variance were performed on the Brown, Fraser, Bellugi Test data to assess the effects of status-race upon the three tasks--imitation, comprehension, production. Where significant results were obtained, planned comparisons were made between the pairs of means. In addition, *t*-tests were calculated between pairs of task means within each status-race group.

The .05 level of significance was used for all tests of significance.

## RESULTS

### Reliability and Validity of Instruments

In order to assess the reliability and validity of the Day Language Screen, a separate sample of children was tested in the winter of 1969. These four year old children were selected from another public school pre-kindergarten class comparable to those included in the study. There were 19 lower status black children; eight boys and eleven girls. The same testing procedures were followed for this sample as were used for the main study. The Language Screen pre-test was administered individually and the post-test was given two weeks later. In the intervening time, the Peabody Picture Vocabulary Test (Dunn, 1959) was administered to each child. Correlations were obtained between the test-retest scores on the Language Screen and between the PPVT and Language Screen scores. Table 2 reports these results.

The reliability of the Brown, Fraser, Bellugi Test of Grammatical Contrasts was assessed by calculating the odd-even correlation between items and correcting for attenuation by applying the Spearman-Brown Formula. For the sample of 147 subjects correlation coefficients obtained for each task were: Imitation .95, Comprehension .68, and Production .94.

### Description of the Sample

The demographic data obtained were used to further describe the sample. Table 3 gives the mean and standard deviation of the chronological age and status rating by sex and status-race group. Table 3 also gives summary information regarding the number of siblings and the number of oldest, youngest, and only children in the sample. All of the subjects came from homes where American English was the only language spoken.

### Language Programs

An hypothesis stated in the proposal for this research project was designed to examine the effects of different kinds of language instruction on the ability of children to use a conceptual or descriptive-part whole style in describing objects (Nurss and Day, 1968). The basis for the hypothesis was the existence of two clearly different instructional models then in use in the Atlanta Public Schools pre-kindergartens (Day, 1967). It seemed clear that one could test the effect of each model on language maturity by using children in the pre-kindergarten classes who met the status-race, sex and age criteria for sample selection.

Soon after pre-test data gathering began it became obvious that elements of both instructional models were present in most of the public school classes. An observation schedule was developed from which data describing the nature of instruction could be taken. Inspection of these data indicates rather clearly what had been suspected. It would be impossible to examine the effects of different instruction on language behavior; instruction in the pre-kindergartens was not markedly different from class to class.

Table 2

Reliability and Validity of the Day Language Screen
(n=19)

| Language Screen | Test-Retest Correlation | Correlation with PPVT |
|---|---|---|
| Part I | .81** | .46* |
| Part II | | |
| Contextual-Relational | .81** | .15 |
| Descriptive-Part Whole | | |
| Nouns Alone | .19 | -.08 |
| Adjectives Alone | .29 | -.22 |
| Nouns & Verbs with Modifiers | .69** | .54* |
| Conceptual | -.10 | .09 |
| Total Attributes | .57* | .28 |

*Significant beyond .05 level
**Significant beyond .01 level

Table 3

Description of the Sample--Chronological Age, Status, and Siblings

| Variable | Higher Status White (n=50) | Lower Status White (n=40) | Lower Status Black (n=57) | Total (n=147) |
|---|---|---|---|---|
| Chronological Age[a] | | | | |
| Mean | 51.62 | 51.58 | 52.14 | 51.81 |
| Standard Deviation | 2.94 | 3.13 | 3.81 | 3.34 |
| Status[b] | | | | |
| Range | 1 - 2 | 3 - 5 | 3 - 5 | 1 - 5 |
| Median | 1 | 4 | 4 | 3 |
| Siblings | | | | |
| Range | 0 - 6 | 0 - 6 | 0 - 9 | 0 - 9 |
| Median | 2 | 2 | 2 | 2 |
| % only child | 9.4% | 12.5% | 10.5% | 12.9% |
| % oldest child | 20.0% | 15.0% | 15.8% | 17.7% |
| % youngest child | 48.0% | 32.5% | 45.6% | 42.9% |

[a]In months on November 1, 1968.

[b]Based on parental occupation; range: 1 - 5, with 1 as high and 5 as low.

The observation schedule did produce data showing that only in the lower status schools did the children receive small group instruction (7 or fewer children). In each of the four higher status schools what language instruction did occur included all pupils at the same time in one large group.

Daily language development lessons were held in each lower status school class, giving all lower status children regular instruction. Only one of the four higher status schools had daily language instruction. If the attitude toward special language instruction in the higher status schools could be characterized, it might be said that the role of the teacher was to encourage each child to talk and to listen carefully to what they say. The attitude of the lower status school teacher might best be described as being convinced that language development instruction was necessary if the children are to succeed in school.

Instruction for the lower status children lasted from 15 to 30 minutes per day. The mean instructional time per day was 23.5 minutes. Oral pattern drills were used quite extensively in the public schools. Emphasis was placed on expressive rather than receptive language in all but two of the nine lower status pre-kindergartens.

A summary of the differences between instruction for higher status and lower status children would include:

1. Small group rather than large group instruction in the lower status schools.

2. Emphasis on direct instruction rather than casual instruction in the lower status schools.

3. Concern for expressive language development in the lower status schools and uncertainty about what language skills if any were being emphasized in the higher status schools.

Day Language Screen

Language Screen - Part I. The results of Part I of the Language Screen were analyzed by three two-way analyses of variance assessing the effects of sex and status-race upon the pre-test, post-test, and gain scores on the screen. The means and standard deviations of these scores are given in Table 4, and the results of the analyses of variance are presented in Table 5.[1]

No significant effects were found due to sex or to the interaction of sex with status-race. Significant effects due to status-race were found for all three scores. Planned comparisons were made among the pre-test, post-test, and gain score means for the three status-race groups.

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[1]Means and standard deviations of each variable by individual class are given in Appendix E.

Table 4

Means and Standard Deviations for Language Screen Pre-test, Post-test and Gain Scores by Sex and Status-Race[a]

| Group | N | Pre-test | | Post-test | | Gain | |
|---|---|---|---|---|---|---|---|
| | | Mean | sd | Mean | sd | Mean | sd |
| Total Group | 147 | 27.77 | 7.89 | 35.43 | 5.52 | 7.66 | 5.16 |
| Boys | 83 | 27.72 | 6.84 | 35.07 | 5.10 | 7.35 | 4.45 |
| Girls | 64 | 27.83 | 9.13 | 35.89 | 6.03 | 8.06 | 5.98 |
| Higher status white total | 50 | 31.98 | 5.86 | 36.92 | 4.75 | 4.94 | 3.65 |
| Boys | 32 | 31.19 | 6.00 | 36.09 | 4.66 | 4.91 | 3.61 |
| Girls | 18 | 33.39 | 5.50 | 38.39 | 4.67 | 5.00 | 3.82 |
| Lower status white total | 40 | 25.43 | 8.26 | 34.53 | 5.87 | 8.10 | 5.22 |
| Boys | 21 | 25.95 | 6.51 | 33.95 | 5.54 | 8.00 | 4.44 |
| Girls | 19 | 26.95 | 10.00 | 35.16 | 6.31 | 8.21 | 6.10 |
| Lower status black total | 57 | 25.02 | 7.74 | 34.75 | 5.72 | 9.74 | 5.27 |
| Boys | 30 | 25.27 | 6.54 | 34.77 | 5.21 | 9.50 | 4.10 |
| Girls | 27 | 24.74 | 9.02 | 34.74 | 6.34 | 10.00 | 6.40 |

[a]Maximum score = 46.

Table 5

Analyses of Variance of Pre-test, Post-test, and Gain Scores on the Day Language Screen by Sex and Status-Race

| Source | Sum of Squares | Mean Square | Degrees of Freedom | F |
|---|---|---|---|---|
| **Pre-test** | | | | |
| Sex | 0.40 | 0.40 | 1 | 00.00 |
| Status-Race | 1411.66 | 705.83 | 2 | 13.04** |
| Interaction | 47.97 | 23.99 | 2 | 0.44 |
| Error | 7632.10 | 54.13 | 141 | --- |
| Total | 9092.14 | --- | 146 | --- |
| **Post-test** | | | | |
| Sex | 24.20 | 24.20 | 1 | 0.81 |
| Status-Race | 186.23 | 93.12 | 2 | 3.12* |
| Interaction | 34.54 | 17.27 | 2 | 0.58 |
| Error | 4205.03 | 29.82 | 141 | --- |
| Total | 4450.00 | --- | 146 | --- |
| **Gain** | | | | |
| Sex | 18.38 | 18.38 | 1 | 0.79 |
| Status-Race | 608.11 | 304.05 | 2 | 13.12** |
| Interaction | 1.13 | 0.57 | 2 | 0.02 |
| Error | 3267.38 | 23.17 | 141 | --- |
| Total | 3894.99 | --- | 146 | --- |

*Significant beyond .05 level
**Significant beyond .01 level

The results of these comparisons are given in Table 6. The higher status white group obtained significantly higher pre- and post-test scores than either of the lower status groups. However, both the lower status white and the lower status black groups obtained significantly larger gain scores than did the higher status white group.

Thus the first hypothesis, which stated that the higher status white children would be more proficient in expressive and receptive use of certain aspects of standard American English than would the lower status white or black children, was supported.

Language Screen - Part II. The attributes used by the children to describe the three objects were categorized using the modification of the Sigel system described above. The number of attributes in each category was obtained and separate analyses were computed for these six categories. The pre-test, post-test, and gain score means and standard deviations for each category by status-race are given in Table 7. Kruskal-Wallis analyses were performed to determine the effects of status-race upon the use of attributes in description. These results are presented in Table 8. Table 9 presents the Mann-Whitney U tests between pairs of means for the categories in which the Kruskal-Wallis tests were significant. Both the higher status white and lower status black groups contributed to these significant differences. Of the six significant comparisons involving gain scores, it was the lower status black group who gained more in the use of attributes in all but one instance.

The second hypothesis, which stated that the higher status white children would be more likely to describe objects using a conceptual or descriptive-part whole style than would the lower status white or black children, was only partially supported. There were no significant differences among the three groups in use of the conceptual style on either the pre- or post-test. The descriptive-part whole style was subdivided into three categories, nouns alone, adjectives alone, and nouns or verbs with modifiers. There were no significant differences among the three groups in the use of adjectives alone on either the pre- or post-test or in the use of nouns alone on the pre-test. The higher status white group did use more modifiers on both the pre- and post-test than did the lower status white or black groups. However, the lower status black group used significantly more attributes in the nouns alone category on the post-test than did the higher status white group.

Language Screen Gains. The Language Screen Parts I and II were given in the fall and spring of the year in order to assess the gains in language proficiency which the children made during the school year. The differences between the mean pre-test and post-test scores for the total group were compared and $t$-tests were calculated to determine whether these differences were significant. Table 10 reports the results of these tests. The gains were significant in every case except the category of conceptual attributes. Very few children used this category of attributes on either the pre-test or the post-test.

Berko, Fraser, Bellugi Test of Grammatical Contrasts

A series of one-way analyses of variance were performed to determine

Table 6

Planned Comparisons Among Means of Pre-test, Post-test, and Gain Scores on the Language Screen by Status-Race

| Comparison | Difference between Means | F |
|---|---|---|
| **Pre-test** | | |
| Higher status white & Lower status white | 5.55 | 12.64** |
| Higher status white & Lower status black | 6.96 | 23.55** |
| **Post-test** | | |
| Higher status white & Lower status white | 2.39 | 4.26* |
| Higher status white & Lower status black | 2.17 | 4.16* |
| **Gain** | | |
| Higher status white & Lower status white | -3.16 | 9.58** |
| Higher status white & Lower status black | -4.80 | 26.17** |

*Significant beyond .05 level
**Significant beyond .01 level

Table 7

Means and Standard Deviations of Language Screen Attribute
Pre-test, Post-test, and Gain Scores by Status-Race

| Group Category | Pre-test Mean | Pre-test sd | Post-test Mean | Post-test sd | Gain Mean | Gain sd |
|---|---|---|---|---|---|---|
| **Total Group (N=147)** | | | | | | |
| Contextual-Relational | 3.33 | 2.65 | 4.50 | 2.95 | 1.16 | 3.54 |
| Descriptive-Part Whole | | | | | | |
| Nouns Alone | 2.19 | 2.87 | 3.60 | 4.13 | 1.41 | 4.73 |
| Adjectives Alone | 1.03 | 1.29 | 1.74 | 1.91 | 0.71 | 2.05 |
| Modifiers | 2.73 | 3.00 | 3.46 | 3.11 | 0.73 | 3.28 |
| Conceptual | 0.13 | 0.38 | 0.15 | 0.44 | 0.02 | 0.58 |
| Total | 9.39 | 5.61 | 13.21 | 6.53 | 3.82 | 6.67 |
| **Higher status white (N=50)** | | | | | | |
| Contextual-Relational | 3.68 | 2.30 | 4.18 | 2.66 | 0.50 | 2.86 |
| Descriptive-Part Whole | | | | | | |
| Nouns Alone | 2.40 | 2.75 | 2.96 | 3.40 | 0.56 | 3.82 |
| Adjectives Alone | 1.16 | 1.35 | 1.24 | 1.48 | 0.08 | 1.75 |
| Modifiers | 4.04 | 3.28 | 4.60 | 3.63 | 0.56 | 3.72 |
| Conceptual | 0.22 | 0.46 | 0.14 | 0.40 | -0.08 | 0.63 |
| Total | 11.44 | 5.62 | 13.02 | 5.43 | 1.58 | 6.42 |
| **Lower status white (N=40)** | | | | | | |
| Contextual-Relational | 3.10 | 2.82 | 4.05 | 2.37 | 0.95 | 3.79 |
| Descriptive-Part Whole | | | | | | |
| Nouns Alone | 1.58 | 2.75 | 1.90 | 2.47 | 0.33 | 3.72 |
| Adjectives Alone | 0.85 | 1.27 | 1.55 | 1.34 | 0.70 | 1.51 |
| Modifiers | 1.95 | 2.84 | 2.78 | 2.41 | 0.83 | 2.74 |
| Conceptual | 0.05 | 0.22 | 0.15 | 0.43 | 0.10 | 0.38 |
| Total | 7.55 | 5.57 | 10.45 | 5.85 | 2.90 | 6.51 |
| **Lower status black (N=57)** | | | | | | |
| Contextual-Relational | 3.19 | 2.82 | 5.09 | 3.45 | 1.89 | 3.82 |
| Descriptive-Part Whole | | | | | | |
| Nouns Alone | 2.44 | 3.03 | 5.35 | 4.96 | 2.91 | 5.68 |
| Adjectives Alone | 1.04 | 1.25 | 2.32 | 2.40 | 1.28 | 2.46 |
| Modifiers | 2.12 | 2.46 | 2.95 | 2.81 | 0.82 | 3.26 |
| Conceptual | 0.11 | 0.36 | 0.16 | 0.49 | 0.05 | 0.64 |
| Total | 8.89 | 5.14 | 15.32 | 7.19 | 6.42 | 6.20 |

Table 8

Kruskal-Wallis Tests of Language Screen Attribute
Pre-test, Post-test, and Gain Scores by Status-Race

| Source | H |
|---|---|
| **Pre-test** | |
| Contextual-Relational | 2.53 |
| Descriptive-Part Whole | |
| Nouns Alone | 5.15 |
| Adjectives Alone | 1.54 |
| Modifiers | 17.95** |
| Conceptual | 5.43 |
| Total Attributes | 10.33** |
| **Post-test** | |
| Contextual-Relational | 2.33 |
| Descriptive-Part Whole | |
| Nouns Alone | 18.52** |
| Adjectives Alone | 5.66 |
| Modifiers | 8.92* |
| Conceptual | 0.59 |
| Total Attributes | 12.91** |
| **Gains** | |
| Contextual-Relational | 5.36 |
| Descriptive-Part Whole | |
| Nouns Alone | 9.15* |
| Adjectives Alone | 6.26* |
| Modifiers | 0.30 |
| Conceptual | 3.83 |
| Total Attributes | 13.85** |

*Significant beyond .05 level
**Significant beyond .01 level

Table 9

Mann-Whitney U Tests Between Means of Language Screen Attribute Pre-test, Post-test, and Gain Scores by Status-Race

| Comparison | z |
|---|---|
| **Pre-test** | |
| Nouns and Verbs with Modifiers | |
| Higher status white & Lower status white | 3.76** |
| Higher status white & Lower status black | 3.45** |
| Total Attributes | |
| Higher status white & Lower status white | 3.12** |
| Higher status white & Lower status black | 2.10* |
| **Post-test** | |
| Nouns Alone | |
| Lower status black & Higher status white | 2.91** |
| Lower status black & Lower status white | 4.01** |
| Nouns and Verbs with Modifiers | |
| Higher status white & Lower status white | 2.43** |
| Higher status white & Lower status black | 2.53** |
| Total Attributes | |
| Lower status black & Lower status white | 2.95** |
| Higher status white & Lower status white | 2.16* |
| **Gain** | |
| Nouns Alone | |
| Lower status black & Lower status white | 2.60** |
| Lower status black & Higher status white | 2.53** |
| Adjectives Alone | |
| Lower status black & Higher status white | 2.24* |
| Total Attributes | |
| Lower status black & Higher status white | 2.62** |

*Significant beyond .05 level
**Significant beyond .01 level

Table 10

t-tests of Differences Between Pre-test and Post-test Scores on the Language Screen for the Total Group

| Category | Difference Between Means | t |
|---|---|---|
| Language Screen - Part I | 7.66 | 17.98** |
| Language Screen - Part II | | |
| Contextual-Relational | 1.16 | 3.98** |
| Descriptive-Part Whole | | |
| Nouns Alone | 1.41 | 3.61** |
| Adjectives Alone | 0.71 | 4.22** |
| Modifiers | 0.73 | 2.72** |
| Conceptual | 0.02 | 0.42 |
| Total Attributes | 3.82 | 6.93** |

**Significant beyond .01 level

the effects of status-race upon the children's performance on the three tasks of this test: imitation, comprehension, production. The means and standard deviations of the scores on these tasks are given by group in Table 11. The results of these analyses of variance are given in Table 12. Significant main effects due to status-race were obtained for all three tasks. Tests of planned comparisons were then made in order to locate the source of these significant effects. These comparisons are reported in Table 13. The higher status white group performed significantly better than both of the lower status groups on all three tasks. The lower status white group performed significantly better than the lower status black group on comprehension. The lower status black group scored significantly higher than the lower status white group on imitation. There was no significant difference between the scores of the two lower status groups on production.

The third hypothesis, which stated that the higher status white children would be more likely to comprehend and produce the grammatical structures than would the lower status white or black children, was completely supported.

*t*-tests were computed between the mean scores on the three tasks for the total group and for the three status-race groups. The results of these tests are given in Table 14. In each case the children scored significantly better on both the imitation and comprehension tasks than they did on the production tasks. There was no significant difference between the imitation and comprehension tasks in the higher status white and the lower status black groups; however, the lower status white group performed significantly better on the comprehension task than on the imitation task.

Table 11

Means and Standard Deviations of Brown, Fraser, Bellugi Test Scores[a] by Task and Status-Race

| Group | N | Imitation | | Comprehension | | Production | |
|---|---|---|---|---|---|---|---|
| | | Mean | sd | Mean | sd | Mean | sd |
| Total Group | 147 | 35.66 | 10.13 | 37.46 | 6.00 | 24.59 | 10.95 |
| Higher status white | 50 | 39.84 | 8.87 | 41.28 | 5.02 | 31.64 | 9.40 |
| Lower status white | 40 | 31.33 | 12.28 | 36.90 | 5.20 | 20.13 | 10.96 |
| Lower status black | 57 | 35.04 | 8.02 | 34.49 | 5.52 | 21.54 | 9.12 |

[a]Maximum score on each task = 48.

Table 12

Analyses of Variance of Brown, Fraser, Bellugi Imitation, Comprehension, and Production Scores by Status-Race

| Task<br>Source | Sum of Squares | Mean Square | Degrees of Freedom | F |
|---|---|---|---|---|
| Imitation | | | | |
| Status-race | 1,647.57 | 823.78 | 2 | 8.89** |
| Error | 13,343.42 | 92.66 | 144 | --- |
| Total | 14,990.99 | --- | 146 | --- |
| Comprehension | | | | |
| Status-race | 1,244.54 | 622.27 | 2 | 22.38** |
| Error | 4,003.93 | 27.81 | 144 | --- |
| Total | 5,248.46 | --- | 146 | --- |
| Production | | | | |
| Status-race | 3,811.47 | 1905.74 | 2 | 20.06** |
| Error | 13,680.04 | 95.00 | 144 | --- |
| Total | 17,491.51 | --- | 146 | --- |

**Significant beyond .01 level

Table 13

Planned Comparisons Among Status-Race Group Mean Scores on the Brown, Fraser, Bellugi Tasks

| Task Comparison | Difference Between Means | F |
|---|---|---|
| **Imitation** | | |
| Higher status white & Lower status white | 8.51 | 17.37** |
| Higher status white & Lower status black | 4.80 | 6.38** |
| Lower status black & Lower status white | 3.71 | 3.54* |
| **Comprehension** | | |
| Higher status white & Lower status black | 6.79 | 43.62** |
| Higher status white & Lower status white | 4.38 | 15.33** |
| Lower status white & Lower status black | 2.41 | 4.97** |
| **Production** | | |
| Higher status white & Lower status white | 11.51 | 30.94** |
| Higher status white & Lower status black | 10.10 | 28.26** |

*Significant beyond .05 level
**Significant beyond .01 level

Table 14

t-tests Between Brown, Fraser, Bellugi Task
Mean Scores by Status-Race Group

| Group Comparison | Difference Between Means | t |
|---|---|---|
| Total Group | | |
| Comprehension & Production | 12.87 | 12.50** |
| Imitation & Production | 11.07 | 9.00** |
| Higher status white | | |
| Comprehension & Production | 9.64 | 6.38** |
| Imitation & Production | 8.20 | 4.48** |
| Lower status white | | |
| Comprehension & Imitation | 5.57 | 2.64* |
| Comprehension & Production | 16.77 | 8.73** |
| Imitation & Production | 11.20 | 4.31** |
| Lower status black | | |
| Comprehension & Production | 12.95 | 9.18** |
| Imitation & Production | 13.50 | 8.39** |

*Significant beyond the .05 level
**Significant beyond the .01 level

## DISCUSSION

### Day Language Screen - Part I

The analysis of variance of the Language Screen scores revealed no significant differences due to sex. This was an unexpected finding as many prior studies of language skills in young children had found sex differences (McCarthy, 1954). No further analyses were done using sex as a variable because of lack of significant differences in these scores.

Gussow (1965), Horner (1966), and John (1965) have reviewed many studies assessing the influence of socio-economic status on language. They have concluded that children from lower socio-economic level backgrounds tend to be less fluent and less proficient in their language development than their peers from higher socio-economic level backgrounds. The Language Screen scores for the present sample support this conclusion. The higher status white children gave evidence of significantly greater proficiency in the aspects of standard American English assessed by Part I of the screen on both the pre- and post-tests.

However, an important finding was the fact that both of the lower status groups gained significantly more on the Language Screen than did the higher status group. The remedial language programs being used in the pre-kindergarten classes attended by these lower status children were designed to improve their proficiency in several aspects of standard American English, including mastery of plural subjects and verbs, comparative adjectives, past tense of verbs, opposites, verbal analogies, negative forms, and prepositions; and in the use of language for problem solving, making judgements, and reasoning. The significant gains which these children made may be attributed, in part, to this language program. The higher status white group's gain over the year may be attributed more to their continued development of language skills than to any direct language instruction in their schools. In fact, the language program in their classes was much more informal and less direct.

### Day Language Screen - Part II

The second part of the Language Screen required the child to describe three objects--a toy turtle, a glass, and two cars. The record of these descriptions affords measures of two aspects of the children's use of attributes--quantity and quality.

Quantity of Attributes. Cazden (1966) has indicated that children from higher socio-economic levels are more fluent in formal testing situations than are those from lower socio-economic levels. This result is partially substantiated by the present data. On the pre-test the children from the higher status white group used significantly more attributes (total attributes category) in describing the three objects than did the children from the two lower status groups. However, the lower status black group gained significantly more in the use of attributes than did the higher status white group. Therefore, it seems that in formal situations found most often in school lower status children may be less fluent than higher status children unless a remedial language program

of some type is undertaken. Such a remedial program appears to have a positive effect in increasing the lower status children's use of attributes in description in structured interviews such as the Language Screen.

The lower status black children were more fluent in describing the objects on the post-test than were the lower status white children. There was no difference between these groups on the pre-test and gain measures. One might have expected significant differences in the opposite direction. The examiners in this study were white graduate students. Anastasi and Foley (1949) report that white examiners often have an inhibiting effect on black children's test performance. If this effect was operating in the present study, it did not prevent the lower status black children from surpassing the lower status white group in use of attributes.

Quality of Attributes. Sigel (1967) has postulated that children exhibit a hierarchical scheme in their acquisition and use of attributes. He suggests that the first style which they use is contextual-relational or functional descriptions. In most instances this style was used more frequently than any other style by all three of the status-race groups in the present study on the pre-test, post-test, and gain measures.

The highest level style in Sigel's system is the conceptual category. This category was used least often by the three status-race groups on all three measures. No significant differences were found among the three status-race groups on either the contextual-relational or the conceptual styles of attributes.

Within the middle category in Sigel's system, however, status-race differences were found. This descriptive-part whole category was subdivided into three groups--nouns alone, adjectives alone, and nouns and verbs with modifiers. The higher status white children used modifiers significantly more often than did the lower status white and black groups on both the pre- and post-test measures. However, on the post-test the lower status black group used nouns alone significantly more often than did the other two groups. There were no post-test significant differences among the status-race groups on their use of adjectives alone. Thus, there was a tendency for the lower status white children to use the descriptive-part whole style less often than the other two groups.

This difference was also seen in the gain scores. The lower status black group gained significantly more than did the lower status white group in the use of both nouns alone and adjectives alone. It is difficult to discern the cause of these differences in use of attributes between the two lower status groups. The objectives for the language development program suggested that the children be encouraged to use attributes to describe objects. Apparently these objectives were more effectively implemented in the lower status black children's classes than in the lower status white children's classes.

Another possible explanation for the difference in language gains between the lower status black and white groups may be the family and community background of the two groups. Perhaps the lower status black

children in this sample were from more verbal homes and were asked to use language in a greater variety of ways than were the lower status white children in this particular sample.

On Part I of the Language Screen the lower status black and white groups showed less proficiency in standard American English than did the higher status white group. On Part II the higher status white group performed at a higher level of language maturity than did either of the lower status groups. On both sections of the test, however, the lower status groups made large gains during the school year. In fact, they gained significantly more than the higher status group. The lower status children were enrolled in programs which were compensatory in design. Planned language activities, including direct teaching of certain aspects of standard American English and the use of language for description were a part of their daily classroom activities. It appears that these language activities were successful in improving the children's use of standard American English and raising the level of language maturity. Even though the higher status group performed significantly better on several of the post-test measures, the size of the differences was considerably reduced.

Brown, Fraser, Bellugi Test of Grammatical Contrasts

Fraser, et al (1963) found that for their 12 higher status white subjects with a mean age of 40 months the three tasks on the Test of Grammatical Contrasts ranked: Imitation>Comprehension>Production. There were significant differences at the .01 level among each of these tasks. For the present group of 147 higher and lower status white and lower status black subjects with a mean age of 51.8 months the tasks ranked: Imitation = Comprehension>Production. The scores on both the imitation and comprehensions tasks were significantly greater than the scores on the production tasks. Whether those differences were due to the status-race differences between the Fraser, et al sample and the sample in the present study or their chronological age difference or both is difficult to know. Also, the subjects in the present study were able to score much higher than those in the Fraser, et al study. This increased level of proficiency on all three tasks was, no doubt, due to the fact that the present subjects were nearly a year older than those in the Fraser group.

On all three tasks the higher status white group performed significantly better than the two lower status groups. These results substantiate the findings of many researchers (Gordon, 1968) that lower status children are less proficient in producing standard American English syntactic structures than are higher status children. The lower status black children were significantly better than the lower status white group on the imitation task, while the reverse was true for the comprehension task. There was no significant difference between the two lower status groups on the production task.

Further analyses of the data suggest that differences exist among the three status-race groups in their imitation and comprehension of the structures. In each separate group, as well as in the total group, production was significantly lower than both comprehension and imitation.

For the total group, the higher status white children, and the lower status black children there was no significant difference between the comprehension and imitation tasks. Cherry-Peisach (1965) has suggested that black children may have difficulty understanding the speech of white, middle-class teachers. The present study appears to suggest that the lower status black children's understanding of the syntactic structures used about equaled their imitation of them. For the lower status white group, however, their scores on the comprehension task were significantly greater than their scores on the imitation task. In other words, the lower status white children were able to understand structures which they could not imitate.

Brown, Fraser, Bellugi Test--Alternate Scoring System. Both lower status groups spoke dialects which were different from the standard American English of the test. In order to investigate the effect of these dialect differences upon the test scores, an alternate scoring system was devised for the Brown, Fraser, Bellugi Test. This scoring system was based upon features of nonstandard lower status dialects described by McDavid (1967) and Labov (1967). Labov has stated that "there are systematic principles in nonstandard English which differ from those of standard English." He has attempted to list these systematic principles "so that educators can design their teaching efforts with these other / language / systems in mind." (Labov, pp. 30 - 31) To this end the alternate scoring criteria given in Appendix F were devised.

The imitation and production tasks of the Brown, Fraser, Bellugi Test for all 147 subjects were rescored using these criteria and the means and standard deviations were computed by group and by task. These means and standard deviations are given in Table 15. Table 16 gives the t-tests between these means and the comparable means obtained with the original scoring system. It may be seen that there was no difference between the scores of the higher status white group on either task. Both of the lower status groups improved significantly on the production task when the alternate scoring system was used. The lower status black group also improved significantly on the imitation task using the alternate system. The lower status white group's performance on the imitation task was not significantly different, however. Thus the difference between the two lower status groups on the imitation task increased with the alternate scoring.

Baratz (1969) reports the results of a sentence repetition test in which half of the sentences were in standard American English and half in nonstandard Negro dialect. The results indicated that the Negro third and fifth grade subjects did significantly better in repeating the sentences in nonstandard Negro dialect and the white subjects did significantly better in repeating the sentences in standard American English. These results were substantiated for the lower status black group in the present study.

However, the lower status white group did not improve on the imitation task with the alternate scoring system. Two explanations seem reasonable. One is that the dialect of the second scoring system was no closer to the

Table 15

Alternate Scoring System Means and Standard Deviations of Brown, Fraser, Bellugi Test by Task and Status-Race[a]

| Group | N | Imitation | | Production | |
|---|---|---|---|---|---|
| | | Mean | sd | Mean | sd |
| Total | 147 | 38.15 | 9.65 | 27.25 | 10.37 |
| Higher status white | 50 | 40.50 | 8.62 | 32.62 | 8.61 |
| Lower status white | 40 | 33.75 | 11.73 | 23.88 | 11.04 |
| Lower status black | 57 | 39.18 | 7.87 | 24.91 | 9.56 |

[a]Maximum score = 48.

Table 16

*t*-tests Between Mean Scores Obtained with Two Scoring Criteria on Brown, Fraser, Bellugi Imitation and Production Tasks by Status-Race Group

| Task Group | N | Difference Between Means[a] | *t* |
|---|---|---|---|
| Imitation | | | |
| Total | 147 | 2.48 | 2.15* |
| Higher status white | 50 | 0.66 | 0.38 |
| Lower status white | 40 | 2.40 | 0.89 |
| Lower status black | 57 | 4.14 | 2.78** |
| Production | | | |
| Total | 147 | 2.59 | 2.08* |
| Higher status white | 50 | 0.98 | 0.54 |
| Lower status white | 40 | 3.75 | 1.52* |
| Lower status black | 57 | 3.19 | 1.81* |

[a]Positive difference indicates score higher using alternate scoring criteria.

*Significant beyond .05 level
**Significant beyond .01 level

dialect of the lower status white children than the standard American English of the first scoring system. Most studies being reported in the current literature on language and the disadvantaged deal with nonstandard black dialects rather than with nonstandard white dialects. The alternate scoring system used in this study was based upon descriptions of nonstandard English derived primarily from experience with lower status black groups (McDavid, 1967 and Labov, 1967).

Another explanation may be that the lower status white children's difficulty with the imitation task was not due to their dialect, but to other factors such as their listening skills, immediate memory span, attentiveness, or limited verbal environment. They were absent from school more frequently than either of the other groups, and the teachers commented on the lack of interest in pre-school education within the lower status white community. Also, on the imitation task the lower status white children frequently omitted words from the structures and often appeared not to have remembered the content of the structures. This problem was eliminated on the production task as they had the pictures to remind them.

Brown, Fraser, Bellugi Test Analysis by Type of Grammatical Contrast. The 12 grammatical contrasts included in the Brown, Fraser, Bellugi Test were not of uniform difficulty for the subjects. Table 17 gives the percentage of children giving the correct response for each grammatical contrast on the imitation task by status-race group for both the regular and alternate scoring systems. Tables 18 and 19 give similar information for the comprehension and production tasks.

The indirect object/direct object contrast was the most difficult for all of the groups on all three of the tasks. The subject/object passive voice contrast was also difficult on the comprehension and production tasks. The extreme difficulty which all of the subjects had with the indirect/direct object contrast may be due, in part, to the specific sentences used in the Brown, Fraser, Bellugi Test. These sentences used only position to mark the indirect object; a more common marker in oral English probably is position plus the marker to. For example, the sentence used in the test was, "The girl shows the cat the dog," while a more common way to express the same relationship would have been, "The girl shows the dog to the cat."

The easiest contrast for all of the groups on the comprehension and production tasks was the affirmative/negative contrast. The easiest one on the imitation task was the mass noun/count noun contrast, however. No doubt, the latter contrast was easy because it is only two morphemes long and thus requires very little immediate memory span to remember and imitate. However, the mass noun/count noun distinction was relatively difficult for the groups to comprehend and produce.

The affirmative/negative contrast was also the easiest for the subjects in the Fraser, et al study (1963) and the indirect object/direct object contrast was the most difficult one for them on all three tasks. Fraser, et al conclude that "imitation is a perceptual-motor skill that does not work through the meaning system" (1963,

Table 17

Percent Correct on Each Grammatical Contrast on the Brown, Fraser, Bellugi Imitation Task by Status-Race Group for Two Scoring Systems

| Grammatical Contrast | Total N=147 | Higher status white n=50 | Lower status white n=40 | Lower status black n=57 | Alternate Scoring Lower status white n=40 | Alternate Scoring Lower status black n=57 |
|---|---|---|---|---|---|---|
| | % | % | % | % | % | % |
| Mass/Count Noun | 97.4 | 99.5 | 95.0 | 97.4 | 95.0 | 97.4 |
| Singular/Plural Verb-Present | 58.0 | 77.0 | 47.5 | 48.7 | 58.8 | 70.2 |
| Is/Are | 82.1 | 88.0 | 67.5 | 87.3 | 68.1 | 87.3 |
| Present Progressive/ Past Tense | 78.9 | 86.5 | 71.9 | 77.2 | 77.5 | 84.2 |
| Present Progressive/ Future Tense | 85.0 | 86.5 | 76.9 | 89.5 | 77.5 | 89.9 |
| Affirmative/ Negative | 81.0 | 87.0 | 66.9 | 85.5 | 80.0 | 88.6 |
| Subject/Object Passive | 66.0 | 75.5 | 54.3 | 65.8 | 66.3 | 81.1 |
| Indirect/Direct Object | 38.4 | 57.0 | 27.5 | 29.8 | 31.9 | 55.7 |
| Singular/Plural Possessive | 95.9 | 98.5 | 94.4 | 94.7 | 94.4 | 97.4 |
| Subject/Object Active | 64.1 | 83.5 | 61.3 | 49.1 | 71.3 | 73.2 |
| Adjectives in Two Positions | 62.6 | 72.0 | 48.8 | 64.0 | 49.4 | 67.5 |
| Preposition | 81.5 | 85.0 | 71.9 | 85.1 | 71.9 | 82.9 |

Table 18

Percent Correct on Each Grammatical Contrast on the Brown, Fraser, Bellugi Comprehension Task by Status-Race Group

| Grammatical Contrast | Total N=147 | Higher status white n=50 | Lower status white n=40 | Lower status black n=57 |
|---|---|---|---|---|
| | % | % | % | % |
| Mass/Count Noun | 77.6 | 82.5 | 75.0 | 75.0 |
| Singular/Plural Verb-Present | 66.8 | 81.5 | 65.0 | 55.3 |
| Is/Are | 76.5 | 92.0 | 68.8 | 68.4 |
| Present Progressive/ Past Tense | 77.2 | 89.5 | 78.1 | 65.8 |
| Present Progressive/ Future Tense | 85.9 | 93.5 | 85.0 | 79.8 |
| Affirmative/ Negative | 99.3 | 100.0 | 98.8 | 99.1 |
| Subject/Object Passive | 60.4 | 76.0 | 57.5 | 48.7 |
| Indirect/Direct Object | 44.4 | 47.0 | 45.6 | 41.2 |
| Singular/Plural Possessive | 83.5 | 92.5 | 86.3 | 73.7 |
| Subject/Object Active | 88.4 | 92.0 | 89.4 | 84.64 |
| Adjective in Two positions | 88.1 | 94.0 | 81.9 | 87.3 |
| Prepositions | 90.0 | 91.5 | 91.3 | 87.7 |

Table 19

Percent Correct on Each Grammatical Contrast on the Brown, Fraser, Bellugi Production Task by Status-Race Group for Two Scoring Systems

| Grammatical Contrast | Total N=147 | Higher status white n=50 | Lower status white n=40 | Lower status black n=57 | Alternate Scoring Lower status white n=40 | Alternate Scoring Lower status black n=57 |
|---|---|---|---|---|---|---|
| | % | % | % | % | % | % |
| Mass/Count Noun | 67.0 | 79.0 | 60.6 | 61.0 | 60.6 | 61.0 |
| Singular/Plural Verb-Present | 35.4 | 56.5 | 26.3 | 23.2 | 42.5 | 49.1 |
| Is/Are | 55.6 | 68.0 | 46.3 | 51.3 | 51.3 | 53.9 |
| Present Progressive/ Past Tense | 49.8 | 69.5 | 36.9 | 41.7 | 51.3 | 51.8 |
| Present Progressive/ Future Tense | 57.0 | 72.0 | 46.9 | 50.9 | 55.6 | 55.7 |
| Affirmative/ Negative | 73.5 | 89.0 | 51.3 | 75.4 | 80.6 | 83.8 |
| Subject/Object- Passive | 31.1 | 47.0 | 20.0 | 25.0 | 20.6 | 30.3 |
| Indirect/Direct Object | 17.0 | 21.0 | 11.9 | 13.2 | 12.5 | 14.0 |
| Singular/Plural Possessive | 74.8 | 90.0 | 73.1 | 62.7 | 80.0 | 66.2 |
| Subject/Object- Active | 59.5 | 77.5 | 50.6 | 51.3 | 63.1 | 66.7 |
| Adjectives in Two positions | 39.6 | 54.0 | 28.8 | 34.6 | 28.8 | 34.6 |
| Preposition | 56.8 | 65.5 | 48.8 | 54.4 | 48.8 | 54.4 |

p. 133). The data of the present study seem to support this conclusion. The ease of the mass noun/count noun contrast on the imitation task was not repeated on the production task. The children were more likely to produce correctly a longer structure which they understood (for example, the affirmative/negative contrast) than a shorter structure which was more difficult for them to understand. Apparently imitation of a structure does not require comprehension of the structure, while production does. Thus comprehension and production involve both the expression and meaning systems of the language, while imitation involves only the expression system.

The similarity in difficulty of the various grammatical contrasts among the three status-race groups should be noted. Although the lower status groups performed significantly less well than the higher status group, it was the same contrasts which the groups found easy or difficult. It would be interesting to compare the performance on the Brown, Fraser, Bellugi Test of a group of lower status five or six year old children to the performance of the higher status four year olds in this study.

The greatest improvement made by the lower status white group when the alternate scoring system was used was on the affirmative/negative contrast. This was true for both the imitation and production tasks. For the lower status black group, however, the greatest improvement on the imitation task was on the indirect object/direct object contrast and, on the production task, the singular/plural verb contrast. It is difficult to interpret these differences. Perhaps the fact that the alternate scoring system was based on nonstandard black dialects rather than nonstandard white dialects may be important.

Status Effects on Language Development

One of the purposes in undertaking the present study was to obtain base line data regarding Southern higher status white and lower status black and white children's language proficiency. Table 20 summarizes the findings regarding the language proficiency of the three groups of four-year olds studied.

A question raised in the proposal for this study was whether the sequence of the acquisition of language was the same for all children but with lower status children showing a slower rate of development. This may be the case although the data from this study are inconclusive. It is clear that in the use of attributes to describe objects all children in the study were able to use the contextual-relational category easily, and unable to use conceptual category to any degree. Differences between groups appeared in the middle category--descriptive-part whole.

In the Brown, Fraser, Bellugi tasks all groups had mastered the mass noun/count noun, affirmative/negative, and present progressive/future tense contrasts but none had mastered the indirect object/direct object and adjective in two positions contrasts. All the groups were in the process of acquiring the other seven contrasts with the higher status white group showing a greater degree of mastery.

These data could be interpreted as supporting the contention that all children follow the same sequence in developing language. Differences

Table 20

Base Line Data Describing Language Proficiency in Southern Four Year Old Higher Status White and Lower Status Black and White Children

| Language Measure | Higher Status White | Lower Status Black | Lower Status White |
|---|---|---|---|
| Contextual-Relational[a] | X | X | X |
| Descriptive-Part Whole | | | |
| Nouns Alone | X | X | |
| Adjectives Alone | | X | |
| Modifiers | X | X | X |
| Conceptual | | | |
| Mass/Count Noun[b] | | | |
| Imitation | X | X | X |
| Comprehension | X | X | X |
| Production | X | | |
| Singular/Plural verb | | | |
| Imitation | X | | |
| Comprehension | X | | |
| Production | | | |
| Is/Are | | | |
| Imitation | X | X | |
| Comprehension | X | | |
| Production | | | |
| Present Progressive/ Past Tense | | | |
| Imitation | X | X | |
| Comprehension | X | | X |
| Production | | | |

(Table continued on next page)

Table 20 (continued)

| Language Measure | Higher Status White | Lower Status Black | Lower Status White |
|---|---|---|---|
| Present Progressive/ Future Tense | | | |
| Imitation | X | X | X |
| Comprehension | X | X | X |
| Production | | | |
| Affirmative/Negative | | | |
| Imitation | X | | X |
| Comprehension | X | X | X |
| Production | X | X | |
| Subject/Object Passive | | | |
| Imitation | X | | |
| Comprehension | X | | |
| Production | | | |
| Indirect/Direct Object | | | |
| Imitation | | | |
| Comprehension | | | |
| Production | | | |
| Singular/Plural Pronoun Possessive | | | |
| Imitation | X | X | X |
| Comprehension | X | | X |
| Production | X | | |

(Table continued on next page)

Table 2.3 (continued)

| Language Measure | Slightly Skewed | Severely Skewed | Severely Skewed |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

between higher and lower status groups may be differences in the degree to which the language sequence is developed. A longitudinal study of the acquisition of language development in higher and lower status groups needs to be undertaken before this question can be answered completely.

This study supports the common assumption that differences do exist between the language skills of lower status and higher status children. In the formal testing situation, the lower status children were less proficient in using various language skills, less mature and less fluent in their use of attributes to describe objects, and less able to imitate, comprehend, and produce certain grammatical structures. The remedial program designed to teach certain language skills to the lower status children was successful in producing large gains in language skills as measured by the instruments used in this study. In fact, the lower status children gained significantly more than the higher status children in most areas measured.

The question still remains as to what causes these differences in language skill, and what can or should be done about them. Baratz states that three types of explanations have been suggested: (1) black children are "verbally destitute, i.e., they [ can't ] talk, and, if they [ can ], it [ is ] deviant speech, filled with 'errors'"; (2) "the children [ don't ] talk, ...[ and ] if they [ do ] talk, their speech [ is ] such that it [ is ] detrivent to cognitive growth"; and (3) "they speak a well-ordered, highly structured, highly developed language system which in many aspects is different from standard English." (1969, p. 94). She concludes that only the third explanation is valid. The present study supports that the third statement might also be made about the dialect of Southern lower status white children.

Certainly Baratz is correct in suggesting that these children can and do talk. It has been suggested that the lower status child is not subjected to verbal stimulation in the home to the degree higher status children are (Deutsch, 1963). Yet the school's highly verbal curriculum does not take into account these suggested differences in language background. It would seem, if this is the case, that lower status children would be at a distinct disadvantage when forced to operate in the formal school setting.

The language of the school is standard American English. In most instances, children who do not speak standard American English and have not been subjected to intense verbal stimulation experience difficulty both in comprehending the textbooks and in learning to read the textbooks which are written in the standard dialect (Goodman, 1965; Stewart, 1965). For these reasons it is important to study the dialect differences between a particular group of children and the materials from which they are to be instructed. Whether the goal is to write reading materials in the children's dialect (Stewart, 1965) or to instruct the children in standard American English before beginning instruction (Bereiter and Engelmann, 1966), it is important that the school concern itself with these differences.

Most of the linguists concerned with dialect differences among

children have studied black nonstandard dialects. Their work is useful to the educator and researcher in this area. The present study, however, clearly indicates that one cannot assume that lower status white children's dialects are exactly like those of the lower status black children. Descriptions of the dialect of Southern lower status white children are urgently needed.

## Implications

The findings of this study have implications for classroom instruction in language and reading. The four year old lower status child can profit from direct instruction in language skills. These activities should be a part of any pre-school program as a means of helping the children acquire the skills necessary for success in learning to read in the average classroom. Consideration should be given to implementing this program at an even earlier age level and continuing it through the primary grades.

Teachers and school administrators need to learn more about the nature and extent of the differences between the dialects of the children in their classes and the dialect of the school classroom and materials. Plans need to be made for individualizing the curriculum so that these differences may be taken into account. Much of the school failure of the lower status children can be traced to failure to learn to read because of difficulties with the language of the reading materials. The pre-school program offers an opportunity to avoid these difficulties for many children.

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Appendix A

# THE DAY LANGUAGE SCREEN

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# Day Language Screen

David E. Day

Introducing the Language Screen: Say to the subject (S) something like this: "We are going to play a language game. I'm going to show you some things, and ask you to tell me about them." For example (take a toy car from the kit and say), "Tell me what this is." (If child replies, "car," say, "That's right. It is a car (auto, automobile, etc.). Now can you say, 'This is a car'? Say it with me, 'This is a car.' Fine! Now each time I ask you to tell me something I want you to tell me this way. 'This is a car,' or 'This is a pencil' (show pencil) or 'This is a paper.'" (Have child repeat with you.)

Example:

Show child the car again and say:
"What is this?" Record response.
If child says car only, say "Yes but I want you to tell me the whole story--'This is a car.'" Have child repeat.

Show child a block and say:
"What is this?" Record response.

Show child two pencils and say:
"What are these?" Record response.

(Use same directions. Do not repeat the example.)

It is important to know if the child does not understand that sentences are wanted. Check here [ ] if the child does not comprehend the directions.

NOW START THE SCREEN

Directions for Administering the Language Screen: Read each item carefully. Present each item as written.

1. Show the S one model bird. Say, "What is this?" Record the total response.

2. Show the S another bird. Say, "What is this?" Record the total response.

3. Place both birds in one hand, put in front of S and say, "What are these?" Record the total response.

4. Put the duck, turtle, bird and car in front of the S. Ask the S to give you the object that is not an animal.

5. Put the car back and then say, "Give me an object that does not fly."

6. a. Give the S the turtle and ask, "What is this?" Record whole response. (If the child does not recognize the turtle, check the space and then tell S what it is.)

   b. Say to S, "Tell me all you can about this turtle." Tell S to handle it, turn it over, look at it, etc. Record all his responses. Keep encouraging S to tell you more about the turtle. Stop when the S says, "That's all," or when he starts repeating. Get all the information you can.

7. Hold the large box in front of S and say, "This box is big." Then while still holding the big box, pick up the little box with the other hand, hold it in front of the S and say, "This box is what?"

8. Ask the S, "What is another way you could tell me that this is _____?" (use S's response to item 7).

9. a. Give the S the cup and say, "What is this?" Record whole response.

   b. Follow the same procedure as with the turtle in item 6b.

10. Put the two square blocks (one red and thin, one blue and thick on the table in front of the S. Put your finger on the red block and say, "This block is thin." Put your finger on the blue block and say, "What can you tell me about this block?"

11. Keep the blocks on the table. Put your finger on the blue block and say, "This block is not red." Put your finger on the red block and say, "What can you tell me about this block?"

For items 12 - 15:

Place in a straight line on the table in front of the S from his left, a bird, turtle, duck, car. Leave about two inches between each object. The S may not understand the directions. Repeat them as necessary. Do not, however, correct S as he begins the operation.

Then say:

12. "Put the car next to the turtle." Repeat 2 or 3 times if necessary. (return objects to original position.)

13. "Put the bird before the duck." (Return to position.)

14. "Put the turtle in front of the car." (Return to position.)

15. "Put the car in back of the bird." (Return to position.)

16. a. Give the S both cars and say: "What are these?" Record response.

    b. Follow the same procedures used with turtle in item 6b.

For items 17 - 21 (Colors - Expressive):
Place the five colored squares at random on the table. Say to the S as you point to each square, "This square is what color?" Point to:

17. red
18. blue
19. yellow
20. orange
21. green

For items 22 - 26 (Colors - Receptive):
Leave the squares on the table and say to the S, "Put your finger on the _____ square."

22. green
23. orange
24. yellow
25. blue
26. red

For items 27 - 30 (Prepositions - Expressive):
Place the turtle and small box on the table in front of the S. Say as you point to each object, "This is a turtle, this is a box." Then,

27. Put the turtle on the top of the box and say, "Where is the turtle?"

28. Put the turtle under the box and say, "Where is the turtle?"

29. Put the turtle in the box and say, "Where is the turtle?"

30. Hold the turtle over the box and say, "Where is the turtle?"

For items 31 - 34 (Prepositions - Receptive):
Then say to the S.

31. Put the turtle on top of the box.

32. Put the turtle over the box.

33. Put the turtle under the box.

34. Put the turtle in the box.

35. Place the picture of an apple on the table in front of S and ask, "What is this?" (Tell the child what it is if he does not know.)

36. Leave the apple picture on the table, put down the picture of the grapes and say, "What are these?" (Tell the child what it is if he does not know.)

37. Leave the grapes and apple pictures on the table, put down the watermelon picture and say, "What is this?" (Tell the child what it is if he does not know.)

38. Put the pictures close together and say, "What are all of these called." Point with your finger circling the three pictures as you ask the question.

39. Put the picture of the triangle on the table and ask, "What is this a picture of?" (Tell S if he does not know.)

40. Keep the triangle picture on the table, put down the picture of the square and say, "What is this a picture of?" (Tell S if he does not know.)

41. Keep the triangle and square pictures on the table, put down the picture of the circle and say, "What is this a picture of?" (Tell S if he does not know.)

42. Put the pictures close together and say, "What are all of these called?"

43. Spread the pictures of animals, flowers and tools on the table and say, "Hand me all the animal pictures."

44. Put the pictures back on the table and say, "Hand me all the tool pictures."

45. Pick up all the flower pictures, give them to the S and say, "What are these pictures of?"

46. Let the S handle the sponge. Say, "The sponge is big and soft." Then give S the small block and say, "The sponge is big and soft. What is this?"

For items 47 - 49:
Ask the S each question. Repeat 2 or 3 times until you are confident he understands. Stop when you judge the task as beyond S's comprehension.

*47. Say to S, "If I eat too much ice cream, I'll (what)?"

*48. If I gave you some ice cream and some candy which would you eat first?

*49. Why would you eat (_____) first?

*Not scored

## Language Screen Response Score Sheets

Name_____ Date tested_____

Class_____ Pre-test Post-test

Responses to examples:

Car_____

Block_____

Pencils_____

Child does_____ does not_____ appear to understand that sentences are wanted.

Total item score_____

Use of Attributes:

| | Turtle | | Cup/Glass | | Cars | | Total | |
|---|---|---|---|---|---|---|---|---|
| | # | %Total | # | %Total | # | %Total | # | %Total |
| Functions | | | | | | | | |
| Nouns | | | | | | | | |
| Adjectives | | | | | | | | |
| Modifiers | | | | | | | | |
| Classifications | | | | | | | | |
| TOTAL | | 100% | | 100% | | 100% | | 100% |

Comments:

_____

_____

_____

_____

_____

_____

Directions: Be sure to gather all the data asked for in the response sheet. A subjects failure to respond or a response completely irrevelent to the task will not be coded. The items will be left blank; lack of response therefore will be inferred.

1. Record response:_____ (Complete sentence_____ (Noun-verb agreement____

   Correct_____

2. Record Response:_____ (Complete sentence_____ (Noun-verb agreement____

   Correct_____

3. Record response:_____ (Complete sentence_____ (Noun-verb agreement____ (Use of plurals_____

   Correct_____

4. Correct_____

   Incorrect_____

   Object selected_____

5. Correct_____

   Incorrect_____

   Object selected_____

6a. "What is this?"_____

   Correct_____

   Does not recognize turtle_____

b. Responses: "Tell me all you can about the turtle"

   _____ _____ _____

   _____ _____ _____

   _____ _____ _____

   _____ _____ _____

   _____ _____ _____

   _____ _____ _____

   _____ _____ _____

   Plurals_____
   Noun-Verb Agree._____
   Complete sent._____
   "And"_____
   "But/or"_____

7. Correct_____ (e.g., little, small, smaller, etc.)

   Incorrect_____ (e.g., big, large, etc.)

8. Record Response:_____ Correct if S says, "not big."
Correct_____

Incorrect_____

9a. "What is this?"_____

Correct_____

Does not recognize cup_____

b. Responses: "Tell me all you can about the cup"

_____ _____ _____ Plurals_____

_____ _____ _____ Noun-verb agree._____

_____ _____ _____ Complete sent._____

_____ _____ _____ "And"_____

_____ _____ _____ "But/or"_____

_____ _____ _____

_____ _____ _____

_____ _____ _____

10. Record Response:_____

This block is big (thick)._____(Polar opposite)

This block is blue._____(Random response)

This block is not red._____(Random response)

This block is big and blue._____(Polar opposite & random response)

This block is not thin._____(Negation)

This block is not small and not red._____(Double negation)

This block is big and not red._____(Polar opposite & negation)

This block is blue and not small._____(Random response & negation)

11. Record response:_____

_____

This block is red._____(Polar opposite)

This block is thin._____(Random response)

This block is red and thin._____(Polar opposite & random response)

This block is not blue._____(Negation)

This block is not blue and is thin._____(Negation & random response)

This block is not thick._____(Random negation)

This block is not blue and not thick._____(Double negation)

This block is red and not thick._____(Polar opposite & negation)

12. Item moved first: Car (P)_____ Turtle (R)_____

Response: Correct_____

Incorrect_____ If so, where?_____

13. Item moved first: Bird (P)_____ Duck(R)_____

Response: Correct_____

Incorrect_____ If so, where?_____

14. Item moved first: Turtle(P)_____ Car(R)_____

Response: Correct_____

Incorrect_____ If so, where?_____

15. Item moved first: Car(P)_____ Bird(R)_____

Response: Correct_____

Incorrect_____ If so, where?_____

16a. "What are these?"_____

Correct_____

Does not recognize cars_____

16b. Response: "Tell me all you can about the cars."

| | | | |
|---|---|---|---|
| _____ | _____ | _____ | Plurals_____ |
| _____ | _____ | _____ | Noun-verb Agree._____ |
| _____ | _____ | _____ | Complete Sent._____ |
| _____ | _____ | _____ | "And"_____ |
| _____ | _____ | _____ | "But/or"_____ |
| _____ | _____ | _____ | |
| _____ | _____ | _____ | |
| _____ | _____ | _____ | |

Expressive:

17. Red Yes_____ No_____
18. Blue Yes_____ No_____
19. Yellow Yes_____ No_____
20. Orange Yes_____ No_____
21. Green Yes_____ No_____

Receptive:

22. Green Yes_____ No_____
23. Orange Yes_____ No_____
24. Yellow Yes_____ No_____
25. Blue Yes_____ No_____
26. Red Yes_____ No_____

Expressive:

27. Record response:_____
Correct_____ Complete Sentence_____
Incorrect_____ Noun-verb Agreement_____

28. Record response:_____
Correct_____ Complete Sentence_____
Incorrect_____ Noun-verb Agreement_____

29. Record response:_____
Correct_____ Complete Sentence_____
Incorrect_____ Noun-verb Agreement_____

30. Record response:_____
Correct_____ Complete Sentence_____
Incorrect_____ Noun-verb Agreement_____

Receptive:

31. Correct_____

    Incorrect_____

    If incorrect, where did S place turtle?_____

32. Correct_____

    Incorrect_____

    If incorrect, where did S place turtle?_____

33. Correct_____

    Incorrect_____

    If incorrect, where did S place turtle?_____

34. Correct_____

    Incorrect_____

    If incorrect, where did S place turtle?_____

35. Record response:_____

    Correct_____

    Incorrect_____

36. Record response:_____

    Correct_____

    Incorrect_____

37. Record response:_____

    Correct_____

    Incorrect_____

38. Record response:_____

    Correct_____

    Incorrect_____

39. Record response:_____

    Correct_____

    Incorrect_____

40. Record response:_____

Correct_____

Incorrect_____

41. Record response:_____

Correct_____

Incorrect_____

42. Record response:_____

Correct_____

Incorrect_____

43. Pictures selected: Horse_____ Cat_____ Dog_____

3 of 3_____ 1 of 3_____

2 of 3_____ 0 of 3_____

44. Pictures selected: Hammer_____ Saw_____ Rake_____

3 of 3_____ 1 of 3_____

2 of 3_____ 0 of 3_____

45. Record response:_____

Correct_____

Incorrect_____

46. Record response:_____

Small_____(Polar opposite) Not soft_____(Negation)

Hard_____(Polar opposite) Not big & not soft_____(Dbl. Neg.)

Small & Hard_____(Dbl. P. O.) Small & not soft_____(P.O. & Neg.)

Not big_____(Negation) Not big & hard_____(Neg. & P.O.)

*47. Record response:_____

*48. Record response:_____

*49. Record response:_____

_____

*Do not count in total score.

## Language Screen Scoring Criteria

Score all items as correct or incorrect. Correct items score one point. (Maximum score = 46)

Part I

Responses to items 1, 2, and 3 require complete sentences with noun-verb agreement. These are the only items having that requirement. Any such response with the addition of a logically correct adjective in these three responses is accepted.

e.g., 1 and 2 This is a bird.
This is a yellow bird.

3 These are birds.
This is birds.
These are some birds.

Response to items 4 and 5 may be verbal or the child may point to the objects.

Both "car" and "turtle" are correct in 5, although the child need select only one. If the response is "car" or "turtle" plus one of the other two articles, the response is incorrect.

To item 6 the child must answer "turtle" or "this is a turtle." "Frog," "toad," or "turkey" are not accepted.

The response to item 7 should be the opposite of the stimulus. Any opposite of "big" is correct, including the negation of the stimulus.

Negation of the stimulus (#7) must be the reply to item 8.

Response to item 9 may be "cup" or "glass." The response may include an adjective that accurately describes the cup, e.g. "a red cup," "a plastic cup."

The child's response to item 10 should be the polar opposite of the stimulus and/or the negation of that stimulus. Random responses, although accurate, are not accepted unless included with polar opposite or negation response.

Response to item 11 should be the polar opposite of the stimulus. A negation, "this is not blue" is also correct. Random responses alone are not accepted.

The child must place the toys as he is directed by the examiner for items 12 to 15.

Response to item 16 must be plural. Accepted answers are:

cars
These are cars.
vehicles
a red car and a blue car
a car and a jeep

The following are incorrect replies:

trucks
a car

Items 17 to 21 require the child to express exactly the color of each square as it is shown to him. "Pink" is not accepted for "red." "Purple" is not accepted for "blue."

If the child responds (points) to one square, then changes his mind and points to another square, the final choice is considered to be his response in each item 22 to 26.

Items 27 to 30 require the child to accurately express where the turtle has been placed by the examiner. "Inside" is correct in 29. "Above" is accepted in 30. "There" is not accepted.

The child must place the turtle as he is directed by the examiner for items 31 to 34. In item 32 the child must hold the turtle over the box. Passing the turtle from one side of the box to the other side is incorrect.

Correct responses to item 35 include "apple," "a apple," "an apple," "fruit," "this is an apple," or "that is an apple."

Response to 36 must be plural. Accepted responses are "grapes," "fruit," "some grapes," "these are grapes," "this is some grapes." The following are not correct: "grape," "berries," "strawberries," "blueberries," "cherries."

Response to item 37 should be "watermelon," "melon," or "fruit." "Cantaloupe" is incorrect.

Response to 38 must be "fruit" or "food." An enumeration of items 35 to 37 is incorrect.

"Triangle" is the only correct answer for item 39.

Response to 40 must be "a square." "Rectangle" is not correct.

"Circle" is the correct response for item 41. Unacceptable replies are "round," "ball," and "toy."

The correct responses in item 42 are "shapes" or "forms." Enumeration of items 39 to 41 is incorrect.

The adjective "black" may be used with responses to items 39 - 42.

The child must select all three pictures of each category in items 43 and 44. To choose only one or two of the correct three cards, or to choose the correct three and others, is incorrect.

"Flowers" is the correct answer in item 45. To name each flower is not accepted.

The response in item 46 may be a polar opposite and/or a negation of the stimulus. "A hard block" is accepted. "An orange block" is not correct.

Items 47 to 49:
Record responses verbatim. Do not score.

Part II

Certain procedures are used in scoring the number of attributes used in items 6b, 9b, and 16b. In each of these items the responses may be words or phrases. Complete sentences, and exact noun-verb agreement are not required.

Repeated attributes are credited only once. However, if the child gives a description, then repeats it more fully, the more complex response is scored, and the less complete response is ignored.
e.g., The car can go. (function) The car can go fast. (modifier)
Only the modifier is counted.

The categories of attributes in order of increasing complexity and their definitions are:

1. Functions (Contextual-relational) description of the object by what it does or is used for.
   e.g., The turtle crawls.
   You can drink out of it.
   Cars go.

2. Nouns (Descriptive-part whole) use of a noun alone to label or describe the object.
   e.g., It has a shell.
   It has a bottom.
   They have wheels.

3. Adjectives (Descriptive-part whole) use of adjectives or adverbs alone to describe the object.
   e.g., It is green.
   It is red.
   They are little.

4. Modifiers (Descriptive-part whole) use of a noun or verb plus an adjective or adverb to describe the object.
   e.g., Turtles can swim in ponds.
   It is a red glass.
   You can drive fast on the highway.

5. Classification (Conceptual) use of the category or generic name for the object.
   e.g., This a a play turtle.
   It is a real glass.
   This is a convertible.

Statements that are not true are not scored. For example, the cup was red. If the child said "It is a blue cup," the child is not credited for use of an adjective with noun.

Vague descriptions are not scored. The cup had a bump on the bottom which was observed by many of the children. If the response was "it has sumpin' here," no credit is given as the child's vocabulary is not sufficient for him to give an accurate description.

Particular responses and their scoring include:

6b. He be in water. (one function)
He could walk. He could crawl. (two functions)
It's not real. He's a play turtle. (two classifications)

9b. A list of things that can be drunk from the cup. (one function)
It is made of plastic. (one modifier)
It is made of glass. (no credit)

16b. One goes this way and one goes that way. (one function)
This car grey inside. (one modifier)
Steering wheel. (one noun)
Jeep (classification)
Volkswagen "
convertible "
fastback "
not real "

"Ain't" is an acceptable contraction throughout the language screen.

## Appendix B

### Brown, Fraser, and Bellugi Test of Grammatical Contrasts

| Grammatical Contrasts | Utterances Form A | Form B |
|---|---|---|
| 1. Mass noun/ Count noun | 1. Some pepper<br>A pepper | 1. Some chicken<br>A chicken |
| | 2. Some string<br>A string | 2. Some paper<br>A paper |
| 2. Singular verb/ Plural verb (Present indicative | 1. The boys draw.<br>The boy draws. | 1. The dog digs.<br>The dogs dig. |
| | 2. The kittens play.<br>The kitten plays. | 2. The girl waves.<br>The girls wave. |
| 3. Singular verb/ Plural verb (Is/are) | 1. The deer is running.<br>The deer are running. | 1. The sheep is jumping.<br>The sheep are jumping. |
| | 2. The sheep are eating.<br>The sheep is eating. | 2. The deer is resting.<br>The deer are resting. |
| 4. Present progressive/ Past Tense | 1. The paint spilled.<br>The paint is spilling. | 1. The match is burning.<br>The match burned. |
| | 2. The boy is jumping.<br>The boy jumped. | 2. The mommy is cleaning.<br>The mommy cleaned. |
| 5. Present progressive/ Future Tense | 1. The girl is drinking.<br>The girl will drink. | 1. The mommy will sweep.<br>The mommy is sweeping. |
| | 2. The baby is climbing.<br>The baby will climb. | 2. The cup will fall.<br>The cup is falling. |

| | | | |
|---|---|---|---|
| 6. | Affirmative/Negative Sentence | 1. The girl is not cooking.<br>The girl is cooking. | 1. The girl is not reading.<br>The girl is reading. |
| | | 2. The boy is not sitting.<br>The boy is sitting. | 2. The boy is pounding.<br>The boy is not pounding. |
| 7. | Subject/Object (Passive Voice) | 1. The train is bumped by the car.<br>The car is bumped by the train. | 1. The dog is chased by the cat.<br>The cat is chased by the dog. |
| | | 2. The mommy is kissed by the daddy.<br>The daddy is kissed by the mommy. | 2. The girl is pushed by the boy.<br>The boy is pushed by the girl. |
| 8. | Indirect/Direct Object | 1. The mommy gives the bunny the teddy.<br>The mommy gives the teddy the bunny. | 1. The girl shows the cat the dog.<br>The girl shows the dog the cat. |
| | | 2. The boy brings the bird the fish.<br>The boy brings the fish the bird. | 2. The man throws the doll the bear.<br>The man throws the bear the doll. |
| 9. | Singular/Plural Pronoun (Third-person possessive) | 1. Their wagon.<br>His wagon. | 1. Their boat.<br>His boat. |
| | | 2. Their dog.<br>Her dog. | 2. Her pony.<br>Their pony. |
| 10. | Subject/Object (Active Voice) | 1. The dog bites the cat.<br>The cat bites the dog. | 1. The duck pulls the boat.<br>The boat pulls the duck. |
| | | 2. The girl washes the boy.<br>The boy washes the girl. | 2. The girl feeds the boy.<br>The boy feeds the girl. |
| 11. | Adjectives | 1. The dress with black buttons.<br>The black dress with buttons. | 1. The girl with the doll.<br>The clean girl with the doll. |
| | | 2. The boy with the little ball.<br>The little boy with the ball. | 2. The dish on the round table.<br>The round dish on the table. |

| | | |
|---|---|---|
| 12. Preposition | 1. The mail in the box.<br>The mail box. | 1. The bird in the cage.<br>The bird cage. |
| | 2. The dog house.<br>The dog in the house. | 2. The tea cup.<br>The tea in the cup. |

## Directions for Administering
## Brown, Fraser, Bellugi Test of Grammatical Contrasts

Administer three tasks in the sequence indicated on each subject's answer sheet, using the test form (A or B) so indicated. Give two practice items for each task. Give underscored sentence in each contrast first.

Record all responses in Production and Imitation tasks verbatim. Record comprehension response as correct or incorrect. Score is number correct in each task. (Maximum score = 48) Do not include practice items in the score. Imitation and production must be exact grammatical structure. Changes in lexical items may be disregarded as long as such changes do not affect the grammatical structure (e.g. for item "some string," "some yarn" is correct but "a string" and "some line" are incorrect).

### COMPREHENSION

"Here are two pictures. I'm going to tell you what they are called, and then you show me the one I ask for. One is called...and one is called... Show me (underscored phrase). Show me (the other one)."

And: "Here are two more pictures. One is... and one is... Show me..." (etc.)

### PRODUCTION

"I'm going to show you two pictures. I'll tell you the names of the pictures and you tell me the one I point to. One picture is... and one picture is... What is this one called? (point to underscored one.) What is this one called? (point to the other one)."

### IMITATION (Do not show pictures for this task)

"I'm going to say two things and then I want you to say them. I'm going to say... Now <u>you</u> say... (underscored one). Now I'm going to say... and <u>you</u> say... (the other one)." etc.

Brown, Fraser, Bellugi Test of Grammatical Contrasts
Response and Score Sheets

Name_____ Date tested_____

Class_____ Pupil number_____ Forms_____

| Task | Score |
|---|---|
| Imitation | |
| Comprehension | |
| Production | |

Comments:

Sample Response Recording Sheet

PRODUCTION TASK (FORM B)

| | Correct | Incorrect | | Practice Item | Other response |
|---|---|---|---|---|---|
| I. | a_____ | _____ | 1. | The cat with the brown face. | _____ |
| | b_____ | _____ | | The dog with the black tail.* | _____ |
| II. | a_____ | _____ | 2. | The boy playing with the truck. | _____ |
| | b_____ | _____ | | The mouse eating the cracker. | _____ |
| | Test Begins: | | | | |
| 1. | a_____ | _____ | 1. | Some chicken | _____ |
| | b_____ | _____ | | A chicken | _____ |
| 2. | a_____ | _____ | 2. | Some paper. | _____ |
| | b_____ | _____ | | A paper. | _____ |
| 3. | a_____ | _____ | 3. | The dog digs. | _____ |
| | b_____ | _____ | | The dogs dig. | _____ |
| 4. | a_____ | _____ | 4. | The girl waves. | _____ |
| | b_____ | _____ | | The girls wave. | _____ |
| 5. | a_____ | _____ | 5. | The sheep is jumping. | _____ |
| | b_____ | _____ | | The sheep are jumping. | _____ |
| 6. | a_____ | _____ | 6. | The deer is resting. | _____ |
| | b_____ | _____ | | The deer are resting. | _____ |
| 7. | a_____ | _____ | 7. | The match is burning. | _____ |
| | b_____ | _____ | | The match burned. | _____ |

*Underscored item given first

| Correct | | Incorrect | | Practice Item | Other response |
|---|---|---|---|---|---|
| 8. | a_____ | _____ | 8. | The mommy is cleaning. | _____ |
| | b_____ | _____ | | The mommy cleaned. | _____ |
| 9. | a_____ | _____ | 9. | The mommy will sweep. | _____ |
| | b_____ | _____ | | The mommy is sweeping. | _____ |
| 10. | a_____ | _____ | 10. | The cup will fall. | _____ |
| | b_____ | _____ | | The cup is falling. | _____ |
| 11. | a_____ | _____ | 11. | The girl is not reading. | _____ |
| | b_____ | _____ | | The girl is reading. | _____ |
| 12. | a_____ | _____ | 12. | The boy is pounding. | _____ |
| | b_____ | _____ | | The boy is not pounding. | _____ |
| 13. | a_____ | _____ | 13. | The dog is chased by the cat. | _____ |
| | b_____ | _____ | | The cat is chased by the dog. | _____ |
| 14. | a_____ | _____ | 14. | The girl is pushed by the boy. | _____ |
| | b_____ | _____ | | The boy is pushed by the girl. | _____ |
| 15. | a_____ | _____ | 15. | The girl shows the cat the dog. | _____ |
| | b_____ | _____ | | The girl shows the dog the cat. | _____ |
| 16. | a_____ | _____ | 16. | The man throws the doll the bear. | _____ |
| | b_____ | _____ | | The man throws the bear the doll. | _____ |
| 17. | a_____ | _____ | 17. | Their boat. | _____ |
| | b_____ | _____ | | His boat. | _____ |
| 18. | a_____ | _____ | 18. | Her pony. | _____ |
| | b_____ | _____ | | Their pony. | _____ |

| Correct | | Incorrect | | Practice Item | | Other response |
|---|---|---|---|---|---|---|
| 19. | a_____ | _____ | 19. | The duck pulls the boat. | | _____ |
| | b_____ | _____ | | The boat pulls the duck. | | _____ |
| 20. | a_____ | _____ | 20. | The girl feeds the boy. | | _____ |
| | b_____ | _____ | | The boy feeds the girl. | | _____ |
| 21. | a_____ | _____ | 21. | The girl with the doll. | | _____ |
| | b_____ | _____ | | The clean girl with the doll. | | _____ |
| 22. | a_____ | _____ | 22. | The dish on the round table. | | _____ |
| | b_____ | _____ | | The round dish on the table. | | _____ |
| 23. | a_____ | _____ | 23. | The bird in the cage. | | _____ |
| | b_____ | _____ | | The bird cage. | | _____ |
| 24. | a_____ | _____ | 24. | The tea cup. | | _____ |
| | b_____ | _____ | | The tea in the cup. | | _____ |

## Brown, Fraser, Bellugi Test Scoring Criteria

Standard American English is the accepted dialect in this scoring procedure.

Imitation:

The response must be exactly the same as the stimulus.

Exceptions:

1. Response may include the correct contraction of a verb and NOT, or the correct contraction of a pronoun and the verb TO BE.
   e.g., Isn't is acceptable for is not.
   She's is acceptable for she is.

2. Response may include one derivative of parent title.
   e.g., Momma is acceptable for mommy.
   Dadda is acceptable for daddy.

Comprehension:

If the child responds (points) to one picture, then changes his mind, the final more definite selection is considered to be his choice.

Production:

The child must produce the exact grammatical structure which includes the same parts of speech as the stimulus.

1. Attributes may be added if they are lexically correct.

2. The response may not include an article different from that of the stimulus.
   e.g., Correct: the dog
   Incorrect: a dog
   this dog
   that dog

3. The omission of an article is considered to be an error.

4. The omission of a final sound is incorrect.
   e.g., Correct: boys, jumped, cooking.
   Incorrect: boy, jump, cook.

5. The addition of a final sound in the response is incorrect if the final sound is not part of the stimulus.
   e.g., Correct: The kitten plays. The sheep are eating.
   Incorrect: The kittens plays. The sheeps are eating.

6. Non-agreement of the subject and predicate in the response is incorrect.
   e.g., Correct: The mommy is cleaning.
   Incorrect: The mommy be cleaning.
   The mommy are cleaning.

7. A response which excludes the auxillary verb as given in the stimulus is incorrect.
   e.g., Correct: The deer is resting.
   Incorrect: The deer resting.

8. A response reversing the direct object and indirect object as stated in the stimulus and/or adding to is not accepted.
   e.g., Correct: The mommy shows the bear the doll.
   Incorrect: The mommy shows the doll to the bear.

9. Any response which changes the syntactical structure of the stimulus is not accepted.
   e.g., Correct: The dog in the house.
   Incorrect: The dog is in the house.

10. If the syntactical structure of a phrase is not changed, but is used intact within an expanded structure the response is considered to be correct.
    e.g., Correct: Some pepper
    Acceptable: This is some pepper.

11. Certain substitutions in the response are accepted if the substitution is a word having the same meaning lexically to the child as the stimulus. These substitutions include nouns and verbs.
    e.g., Correct: dish, bunny, teddy, kitten, pony, climbs, brings, sleeping, pounding.
    Acceptable: pot, rabbit, bear, cat, horse, crawls, gives, resting, hitting.

12. Allowances are made for the child's mispronunciation of certain words.
    e.g., Correct: mommy, daddy, kittens, sheep
    Acceptable: momma, dadda, kitchens, sheet

13. Certain substitutions in the response are not accepted if these substitutions are not of the same lexical or grammatical meaning of those of the stimulus.
    e.g., Correct: shows, their, his, her, deer, sheep
    Incorrect: gives, they, he, she, deers, sheeps.

14. If the response includes changing an article to an obviously correct possessive pronoun, the response is correct.
    e.g., Correct: The girl with the doll.
    Acceptable: The girl with her doll.

15. Contractions of a verb and NOT and contractions of nouns or pronouns and the verb TO BE are permitted.
    e.g., Correct: The cup is falling; the girl is not cooking.
    Acceptable: The cup's falling; the girl isn't cooking.

16. Ain't is not permitted in any response.

Appendix C

Demographic Data Sheet

School_____ Date_____

Teacher_____

Child's Name_____

Address_____ Phone_____

_____

Birthday_____ Chronological age as of 11/1/68_____

Sex_____ Race_____

Occupation of Father_____

Occupation of Mother_____

Education of Father (highest level)_____

Education of Mother (highest level)_____

Adults in the home: Mother_____ Father_____

Others (specify)_____

Siblings (sex and age of each)_____

_____

_____

_____

_____

Languages spoken in the home_____

## Appendix D

### Language Program Observation Schedule

1. Is there direct instruction? Yes_____ No_____
   a. In a large group (over 10) _____
   b. In a mid-sized group (7 to 10) _____
   c. In a small group (less than 7) _____
2. Number of minutes per day in direct language instruction_____
3. Daily scheduled language lessons? Yes_____ No_____
4. Pattern drills used for language instruction? Yes_____ No_____
5. Lessons have an: Expressive orientation_____
   Receptive orientation_____
6. Instruction is being given on:
   a. Sentence patterns_____
   b. Prepositions_____
   c. Descriptive words_____
   d. If/then or cause-and-effect relationships_____
   e. Plurals_____
   f. Relative size and relationships_____
   g. Noun-verb agreement_____
   h. Use of "not"_____
   i. Conjunctions (and, or, but)_____
7. Describe the teaching staff of each class._____
   _____
8. Who teaches the language lessons?_____
9. Record all questions asked by the teacher during a ten-minute segment of the language lesson.

## Appendix E

Mean and Standard Deviation of Each Variable by Individual Class

| Variable | Class A n=9 | B n=7 | C n=16 | D n=11 | E n=12 | F n=12 | G n=8 |
|---|---|---|---|---|---|---|---|
| **Language Screen** | | | | | | | |
| Part I | | | | | | | |
| Pre-test | 25.67 | 34.96 | 30.31 | 34.64 | 27.42 | 22.08 | 19.13 |
| | 8.49 | 2.04 | 5.90 | 2.06 | 5.58 | 7.39 | 5.54 |
| Post-test | 33.78 | 38.14 | 36.00 | 38.27 | 34.75 | 35.75 | 32.38 |
| | 6.28 | 1.73 | 5.93 | 3.23 | 4.22 | 4.29 | 5.55 |
| Gain | 8.11 | 3.29 | 5.69 | 3.64 | 7.33 | 13.67 | 13.25 |
| | 4.86 | 1.60 | 2.55 | 3.85 | 3.94 | 5.07 | 3.85 |
| Part II Functions | | | | | | | |
| Pre-test | 3.33 | 4.00 | 2.50 | 4.45 | 3.42 | 2.25 | 2.00 |
| | 2.18 | 4.16 | 1.46 | 2.73 | 1.98 | 2.30 | 1.31 |
| Post-test | 4.00 | 4.43 | 3.88 | 3.91 | 3.67 | 5.08 | 4.38 |
| | 2.87 | 2.30 | 3.26 | 2.12 | 1.67 | 3.70 | 1.77 |
| Gain | 0.67 | 0.43 | 1.38 | -0.55 | 0.25 | 2.83 | 2.38 |
| | 2.92 | 4.89 | 3.79 | 2.25 | 1.91 | 3.24 | 2.00 |
| Nouns Alone | | | | | | | |
| Pre-test | 3.00 | 1.14 | 3.00 | 2.00 | 2.25 | 1.08 | 1.25 |
| | 1.80 | 1.86 | 2.66 | 3.58 | 2.26 | 2.94 | 1.67 |
| Post-test | 8.22 | 0.14 | 4.94 | 2.27 | 2.25 | 3.92 | 1.50 |
| | 2.33 | 0.38 | 3.99 | 2.90 | 3.08 | 8.45 | 1.51 |
| Gain | 5.22 | -1.00 | 1.94 | 0.27 | 0.00 | 2.83 | 0.25 |
| | 2.54 | 2.00 | 4.23 | 4.83 | 3.95 | 9.35 | 2.60 |
| Adjectives Alone | | | | | | | |
| Pre-test | 1.00 | 1.14 | 1.94 | 1.36 | 0.67 | 0.92 | 0.50 |
| | 1.32 | 1.21 | 1.12 | 1.86 | 0.98 | 1.56 | 0.76 |
| Post-test | 1.44 | 1.43 | 2.00 | 0.73 | 0.58 | 1.00 | 0.38 |
| | 1.88 | 1.51 | 1.41 | 0.90 | 1.00 | 1.41 | 0.52 |
| Gain | 0.44 | 0.29 | 0.06 | -0.64 | -0.08 | 0.08 | -0.13 |
| | 2.07 | 1.25 | 1.57 | 2.06 | 1.56 | 1.68 | 0.83 |

(Table continued on next page)

Appendix E (continued)

| Variable | A n=9 | B n=7 | C n=16 | D n=11 | E n=12 | F n=12 | G n=8 |
|---|---|---|---|---|---|---|---|
| Modifiers | | | | | | | |
| Pre-test | 3.22 | 1.71 | 2.88 | 5.27 | 2.50 | 1.83 | 1.25 |
| | 2.54 | 2.87 | 3.01 | 3.95 | 1.57 | 3.01 | 1.91 |
| Post-test | 2.44 | 1.57 | 4.56 | 6.00 | 2.83 | 3.50 | 3.88 |
| | 2.24 | 1.13 | 3.71 | 3.52 | 3.24 | 2.78 | 1.36 |
| Gain | -0.78 | -0.14 | 1.69 | 0.73 | 0.33 | 1.67 | 2.63 |
| | 1.92 | 1.86 | 4.45 | 3.77 | 2.57 | 3.03 | 3.02 |
| Conceptual | | | | | | | |
| Pre-test | 0.11 | 0.00 | 0.19 | 0.27 | 0.17 | 0.08 | 0.25 |
| | 0.33 | 0.00 | 0.40 | 0.65 | 0.39 | 0.29 | 0.71 |
| Post-test | 0.55 | 0.14 | 0.13 | 0.09 | 0.17 | 0.25 | 0.00 |
| | 1.01 | 0.38 | 0.50 | 0.30 | 0.39 | 0.62 | 0.00 |
| Gain | 0.44 | 0.14 | -0.06 | -0.18 | 0.00 | 0.17 | -0.25 |
| | 1.13 | 0.38 | 0.68 | 0.75 | 0.60 | 0.39 | 0.71 |
| Total Attributes | | | | | | | |
| Pre-test | 10.67 | 8.00 | 10.31 | 13.36 | 9.00 | 6.17 | 5.25 |
| | 5.87 | 4.76 | 5.36 | 7.75 | 2.52 | 5.46 | 4.20 |
| Post-test | 16.67 | 7.57 | 15.50 | 13.00 | 9.08 | 11.17 | 10.13 |
| | 5.45 | 3.26 | 5.55 | 5.33 | 3.99 | 7.60 | 2.75 |
| Gain | 6.00 | -0.43 | 5.19 | -0.36 | 0.08 | 5.00 | -4.88 |
| | 4.64 | 6.00 | 6.46 | 8.54 | 3.53 | 5.36 | 5.17 |
| Brown, et al Test | | | | | | | |
| Imitation | 33.11 | 36.71 | 37.31 | 42.82 | 37.08 | 34.59 | 32.75 |
| | 9.18 | 9.55 | 9.62 | 6.40 | 11.34 | 5.63 | 12.49 |
| Comprehension | | | | | | | |
| | 33.89 | 39.14 | 40.25 | 42.09 | 40.75 | 34.17 | 35.38 |
| | 5.16 | 4.98 | 6.96 | 3.42 | 4.75 | 3.61 | 4.81 |
| Production | 21.00 | 28.14 | 30.00 | 33.73 | 27.83 | 19.17 | 22.88 |
| | 12.27 | 9.06 | 10.68 | 7.99 | 10.20 | 6.79 | 12.23 |
| Chronological Age[a] | | | | | | | |
| | 51.00 | 52.40 | 51.25 | 53.00 | 49.50 | 52.42 | 51.13 |
| | 3.03 | 4.14 | 3.02 | 2.49 | 2.39 | 2.61 | 4.67 |

(Table continued on next page)

| Variable | H n=15 | I n=8 | J n=14 | K n=11 | L n=7 | M n=17 |
|---|---|---|---|---|---|---|
| Language Screen | | | | | | |
| Part I | | | | | | |
| Pre-test | 27.00 | 24.38 | 25.64 | 36.73 | 23.29 | 27.53 |
| | 5.53 | 11.96 | 9.63 | 3.98 | 4.79 | 6.37 |
| Post-test | 34.93 | 30.75 | 34.79 | 39.27 | 36.00 | 34.94 |
| | 5.98 | 7.50 | 6.57 | 3.52 | 2.38 | 6.38 |
| Gain | 7.93 | 6.38 | 9.14 | 2.55 | 12.71 | 7.41 |
| | 3.92 | 6.19 | 6.42 | 2.77 | 2.98 | 3.22 |
| Part II Functions | | | | | | |
| Pre-test | 2.73 | 4.38 | 3.14 | 4.91 | 6.14 | 2.47 |
| | 2.52 | 2.83 | 2.80 | 2.51 | 2.73 | 2.98 |
| Post-test | 3.80 | 3.13 | 4.00 | 5.45 | 8.00 | 5.59 |
| | 1.70 | 2.03 | 2.11 | 2.98 | 3.27 | 4.44 |
| Gain | 1.07 | -1.25 | 0.86 | 0.55 | 1.86 | 3.12 |
| | 2.91 | 3.65 | 2.68 | 2.62 | 4.18 | 5.45 |
| Nouns Alone | | | | | | |
| Pre-test | 2.07 | 1.25 | 1.07 | 2.09 | 1.71 | 4.47 |
| | 3.37 | 1.67 | 1.82 | 2.66 | 1.25 | 4.23 |
| Post-test | 3.80 | 0.88 | 4.57 | 1.55 | 5.14 | 4.88 |
| | 2.91 | 1.64 | 4.27 | 2.11 | 2.19 | 3.76 |
| Gain | 1.73 | -0.38 | 3.50 | -0.55 | 3.43 | 0.41 |
| | 4.71 | 2.67 | 4.65 | 1.86 | 2.23 | 5.14 |
| Adjectives Alone | | | | | | |
| Pre-test | 0.47 | 1.38 | 1.07 | 0.36 | 0.14 | 1.59 |
| | 0.74 | 1.69 | 1.33 | 0.67 | 0.38 | 1.33 |
| Post-test | 1.67 | 1.75 | 2.50 | 1.36 | 2.71 | 3.71 |
| | 1.11 | 1.67 | 1.91 | 2.01 | 2.06 | 2.89 |
| Gain | 1.20 | 0.38 | 1.43 | 1.00 | 2.57 | 2.12 |
| | 1.26 | 2.07 | 2.44 | 1.67 | 1.90 | 2.89 |

(Table continued on next page)

| Variable | H n=15 | I n=8 | J n=14 | K n=11 | L n=7 | M n=17 |
|---|---|---|---|---|---|---|
| Modifiers | | | | | | |
| Pre-test | 2.60 | 1.63 | 2.43 | 6.18 | 0.86 | 2.00 |
| | 3.48 | 2.00 | 2.41 | 2.99 | 1.21 | 2.62 |
| Post-test | 3.20 | 1.50 | 1.93 | 5.18 | 3.57 | 3.59 |
| | 2.43 | 2.27 | 2.67 | 3.68 | 2.37 | 3.41 |
| Gain | 0.60 | -0.13 | -0.50 | -1.00 | 2.71 | 1.59 |
| | 2.80 | 1.36 | 3.08 | 3.44 | 1.70 | 4.15 |
| Conceptual | | | | | | |
| Pre-test | 0.00 | 0.13 | 0.07 | 0.27 | 0.14 | 0.06 |
| | 0.00 | 0.35 | 0.27 | 0.47 | 0.38 | 0.24 |
| Post-test | 0.07 | 0.13 | 0.71 | 0.18 | 0.43 | 0.00 |
| | 0.26 | 0.35 | 0.27 | 0.41 | 0.53 | 0.00 |
| Gain | 0.07 | 0.00 | 0.00 | -0.09 | 0.29 | -0.06 |
| | 0.26 | 0.53 | 0.39 | 0.54 | 0.76 | 0.24 |
| Total Attributes | | | | | | |
| Pre-test | 7.87 | 8.88 | 7.79 | 13.82 | 9.00 | 10.59 |
| | 6.08 | 5.89 | 5.09 | 5.04 | 3.61 | 5.08 |
| Post-test | 12.73 | 7.38 | 13.00 | 13.73 | 19.86 | 17.76 |
| | 6.13 | 5.83 | 6.95 | 4.84 | 2.41 | 7.81 |
| Gain | 4.87 | -1.50 | 5.21 | -0.09 | 10.86 | 7.18 |
| | 5.79 | 6.65 | 7.80 | 4.70 | 2.79 | 6.70 |
| Brown, et al Test | | | | | | |
| Imitation | 28.27 | 29.63 | 34.93 | 43.55 | 32.86 | 37.53 |
| | 14.14 | 11.31 | 5.89 | 4.50 | 10.42 | 9.41 |
| Comprehension | | | | | | |
| | 36.27 | 38.88 | 33.79 | 42.55 | 32.86 | 36.00 |
| | 5.16 | 5.38 | 4.82 | 3.14 | 6.64 | 6.90 |
| Production | 20.20 | 17.38 | 23.50 | 36.09 | 18.57 | 19.59 |
| | 10.69 | 12.45 | 6.70 | 5.43 | 7.30 | 10.76 |
| Chronological Age[a] | | | | | | |
| | 52.07 | 49.88 | 53.21 | 53.09 | 49.14 | 53.18 |
| | 2.89 | 2.64 | 3.79 | 2.47 | 2.48 | 3.99 |

[a]In months as of 11/1/68

## Appendix F

### Alternate Scoring Criteria for Brown, Fraser, Bellugi Test of Grammatical Contrasts

An alternate scoring procedure was used to assess the influence of Southern dialects upon the imitation and production scores. Certain responses were permitted which had been considered incorrect. These included responses which reflect the adult environment of the child's verbal experience--not an immaturity in his language.

Imitation

Standard scoring criteria given in Appendix B for Imitation applied as did the five additional rules listed below under Production.

Production

Standard scoring criteria given in Appendix B for Production applied except for rules #4, 6, 7, 13, and 16. The alternate versions of these rules are listed below:

4. A response containing the omission of a final sound is correct.
   e.g., Correct: The boy jumped.
   Acceptable: The boy jump.

6. Non-agreement of the subject and predicate is accepted.
   e.g., Correct: The mother is cleaning.
   Acceptable: The mother are cleaning.

   Note: This does no apply to nouns whose singular and plural forms are identical; e;g., deer and sheep. The auxiliary verb in such a response must agree in number with that of the stimulus.

7. A response may exclude the auxiliary verb.
   e.g., Correct: The baby is climbing.
   Acceptable: The baby climbing.

13. A response which changes the possessive pronoun to personal pronouns is correct.
   e.g., Correct: their pony
   Acceptable: they pony

16. Ain't is accepted.

A combination of these rules is also considered to be correct.
Example: Rules #4 and 7. Acceptable: The deer is resting.
Acceptable: The deer rest.